

Accelerating sustainable energy innovations

Innovative energy solutions for your business

Edition 2024



The power of the network

Building global connections



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A word from our CEO



We are proud to present the latest edition of the EIT InnoEnergy Portfolio Catalogue, showcasing the innovative companies within our portfolio. Since 2010, InnoEnergy has been committed to supporting start-ups through our collaborative ecosystem of partners and shareholders.

We have seen remarkable achievements in the last year:

InnoEnergy was ranked as the top VC Firm and Investor in Europe by the Global Startup Ecosystem Report, and as the most active investor in energy in 2023, globally by PitchBook.

We saw the launch of new company-building initiatives, like FertigHy, and Repono, focused on creating industrial champions that contribute to Europe's energy independence and sustainable growth.

We also saw the progress from other companies like Holosolis, which launched Europe's largest solar PV gigafactory. Meanwhile, Verkor secured €2 billion to launch its battery gigafactory, and Hardt Hyperloop raised €12 million for the European Hyperloop Center.

These milestones highlight our portfolio's pivotal role in driving Europe's reindustrialisation and decarbonisation.

Lastly a key highlight for InnoEnergy was the successful completion of a €140 million private placement round, attracting new strategic shareholders and strengthening our capacity to support portfolio companies, accelerate new ventures, and expand our impact across Europe and beyond.

In this catalogue, you will explore our entire portfolio of 200+ companies. Collectively, they are expected to generate €110 billion in revenue and save 2.1G tonnes of CO₂e by 2030. We invite you to discover their stories and the innovations that are helping reindustrialise Europe and lead the global energy transition.

Diego Pavía, CEO, EIT InnoEnergy

The power of the network

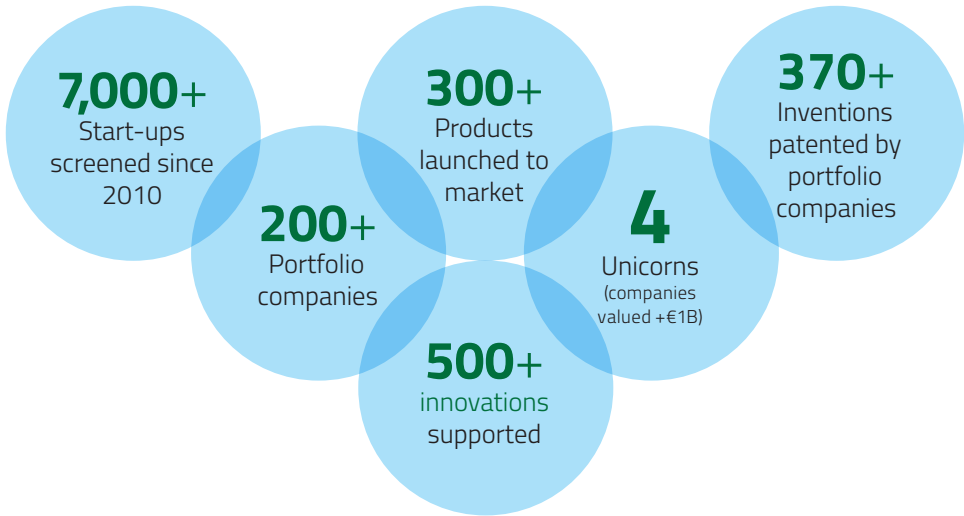
Building global connections

Our strength comes from our wide network of partners. They are our experts, our service providers, the early adopters of innovative solutions, and the employers of our graduates. The InnoEnergy network includes our 38 shareholders, as well as 1,200 partners. All of them support our entrepreneurs and innovators with their experience and expertise. In return, they gain unrivalled opportunities to invest in new ideas and create commercial opportunities for new solutions.

Together our partners represent industry, finance, and higher education – and all are key players within the energy sector.



Our portfolio numbers



*As of December 2022

Impact KPI's from portfolio companies



Our track record at a glance

For the past 14 years, InnoEnergy's work has remained the same: helping entrepreneurs and companies increase their value to impact society, economy, and environment, and contribute to net-zero targets to create a more sustainable world. We achieve this impact not only through our investments, but by coupling these with value-added services to mobilise innovation and providing an ecosystem of support.

This is what sets us apart as an impact investor and we are very proud to receive recognition of this from respected sources year on year.



xx Startup Genome

PitchBook

\sifted/ FT

United Nations SDGs at the core of our investment process

At EIT InnoEnergy we follow the Environmental Social and Governance (ESG) principles for responsible investments. In this context, one important related element is the contribution we make to the Sustainable Development Goals (SDGs) established by the United Nations. They are at the core of our investment process and provide a means to measure impact.



No poverty. Economic growth must be inclusive to provide sustainable jobs and promote equality.



Zero hunger. The food and agriculture sector offers key solutions for development, and is central for hunger and poverty eradication.



Good health and well-being. Ensuring healthy lives and promoting the well-being for all at all ages is essential to sustainable development.



Quality education. Obtaining a quality education is the foundation to improving people's lives and sustainable development.



Gender equality. Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world.



Clean water and sanitation. Clean, accessible water for all is an essential part of the world we want to live in.



Affordable and clean energy. Energy is central to nearly every major challenge and opportunity.



Decent work and economic growth. Sustainable economic growth will require societies to create the conditions that allow people to have quality jobs.



Industry, innovation, and infrastructure. Investments in infrastructure are crucial to achieving sustainable development.



Reduced inequalities. To reduce inequalities, policies should be universal in principle, paying attention to the needs of disadvantaged and marginalized populations.



Sustainable cities and communities. There needs to be a future in which cities provide opportunities for all, with access to basic services, energy, housing, transportation and more.



Responsible consumption and production. Responsible Production and Consumption.



Climate action. Climate change is a global challenge that affects everyone, everywhere.



Life below water. Careful management of this essential global resource is a key feature of a sustainable future.



Life on land. Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.



Peace, justice and strong institutions. Access to justice for all, and building effective, accountable institutions at all levels.



Partnerships. Revitalize the global partnership for sustainable development.

Making an impact in sustainable energy

EIT InnoEnergy operates at the centre of the energy transition and is the leading innovation engine in sustainable energy, bringing the technology and skills required to accelerate the green deal, progress towards Europe's decarbonisation goals, and improve energy security.

According to the PitchBook Global League Tables for 2023, InnoEnergy was the most active investor in energy worldwide for the third consecutive year. Backing innovations across a range of areas, InnoEnergy has an ecosystem of 1200+ partners and 38 shareholders. InnoEnergy has a portfolio of more than 200 companies, which are estimated to generate €110 billion in revenue and save 2.1 gigatonnes of CO₂e accumulatively by 2030. Collectively, these companies have raised more than €25 billion in investment to date.



Creating new markets through industrial value chains



1000 GWh

of sustainable and
competitive batteries
made in Europe by 2030

EUROPEAN
BATTERY
ALLIANCE

EBA250

€250bn/year

new market potential

EIT InnoEnergy is spearheading the decarbonisation of Europe by leading industrial alliances in three strategic sectors: battery storage, green hydrogen and solar photovoltaics. These alliances bring together the knowledge and experience required to develop strategic value chains. By supporting large industrial projects, we are directly impacting the energy trilemma: reducing the cost of energy, limiting greenhouse emissions and increasing availability and security – all of which ultimately play a fundamental role in realising our goal of a carbon neutral Europe by 2050.

This is:

Creating an ad hoc ecosystem with stakeholders

from across the value chain

Increasing the capacity to support large industrial projects

Filling the gaps of the existing value chain by fostering the required funding, skills and talent.



1,200 TWh

of EU final energy
based on green H₂
by 2025

EGHAC

European Green Hydrogen
Acceleration Center

€100bn/year

new market potential
by 2025



30GW

annual solar PV
manufacturing capacity
by 2025



ESIA

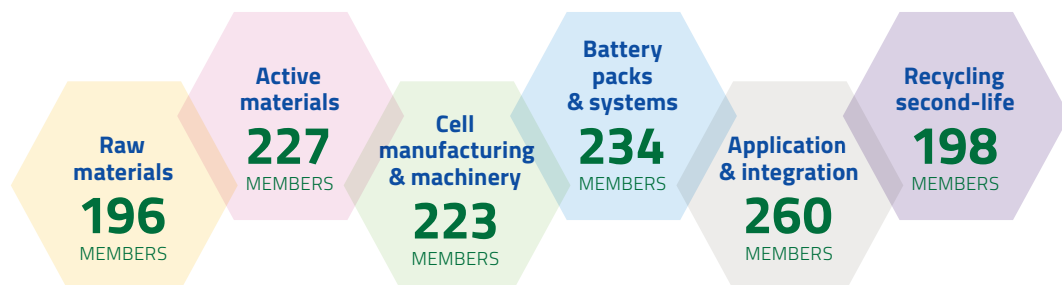
European Solar PV
Industry Alliance

€40bn/year

front-loaded investment
in PV production capacity required

800+

Industrial, financial,
academic and innovation
actors active in one
or several battery value chain segments



Some of EBA250 Members

Building a European battery industry

The European Battery Alliance (EBA), launched by the European Commission in October 2017, is a strategic initiative aimed at establishing a robust and competitive European battery industry. With the market value projected to grow to approximately €500 billion by 2030 and the creation of 1.5 million jobs, the EBA is crucial for Europe’s clean energy transition and industrial competitiveness.

Managed by EIT InnoEnergy, the industrial development programme of the EBA known as EBA250 brings together a dynamic, project-driven community of over 800 industrial and innovation stakeholders, covering the entire value chain from mining to recycling.

After years of steady growth, the European industry is currently facing increased challenges from strong industrial support schemes in China and the US. Nevertheless, the growth opportunity in this sector for Europe remains significant. European-made batteries are built for long-term competitiveness and are best-in-class products

on sustainability, circularity and traceability. By upholding these principles and fostering industry consolidation, the EBA aims to ensure that Europe remains competitive in the global market while effectively addressing both internal and external challenges.

1000 GWh

of sustainable and competitive batteries made in Europe by 2030

€500bn/year

new GDP created by 2030

1.5 M

jobs in Europe maintained or created by 2030



A European value chain

Our goal

Build a resilient, competitive and sustainable pan-European battery industry to capture a market worth €500bn/year by 2030.



A unique open ecosystem

An independent meeting place

More than 800 members throughout the value chain have joined EBA250. The members come from the industrial, academic and financial worlds, from mining to recycling.



Project-driven

Our actions’ DNA

Competitiveness, sustainability, resilience, significant impact, objective focus, urgency, concrete, project-driven, sharing, investment.

EGHAC

European Green Hydrogen
Acceleration Center



€100B
Annual Market
Value



500k
New jobs

Renewable
energy

24

MEMBERS

Hydrogen
storage
and production

15

MEMBERS

Application
+
End-product

86

MEMBERS

Fertiliser • 15 Members

Steel • 17 Members

Cement • 6 Members

Chemicals • 7 Members

Shipping fuel • 9 Members

Organisations, knowledge institutions
and consultancies • 24 Members

Financial institutions and funds • 8 Members

By 2025 the EGHAC wants to build a €100 billion a year green hydrogen economy.
This will create up to 500,000 direct and indirect jobs across the complete value chain.
The ambition for yearly demand for useful green hydrogen based energy will be 1200TWh.

Executive
team
development

Value chain
partners &
co-investors

EGHAC is
accelerating
industrial
decarbonisation as
a green H2 venture
builder

Administration
& marketing

Technology
validation

Business &
investment
case

Institutional
positioning

Decarbonise hard to abate industries

EIT InnoEnergy's ambition is to accelerate the decarbonisation of hard to abate and energy intensive industrial value chains. To achieve this goal, EIT InnoEnergy has set-up the European Green Hydrogen Acceleration Center (EGHAC). EGHAC has the goal to initiate, support and accelerate large scale industrial ventures which will have massive CO₂ reduction impact and kickstart the creation of a green industrial economy. EGHAC focuses on the hard to abate industry sectors such as steel, petrochemicals, cement etc., starting with green hydrogen as a key decarbonisation lever.

EGHAC has two major activities

To build companies (venture builder) in hard to abate industries (with a special focus on green hydrogen). As a venture builder and early-stage investor, our role is to derisk and shorten the time-to-market of industrial decarbonisation. We lead the development of new ventures which disrupt existing business models in bringing together all relevant stakeholders of a value chain, including most importantly the off-takers. We strive to build a business case with just risk and benefits sharing in which the green premium of a product can be kept to a minimum and industrial decarbonisation becomes bankable.

In 2022 EGHAC founded Gravithy, a future market leader in green iron. The fully sustainable iron company will build its first plant in the area of Fos sur Mer, Southern France.

In June 2023 the incorporation of FertigHy, a new player in low-carbon fertiliser, was announced

To develop and grow the InnoEnergy asset portfolio in hard to abate industries and hydrogen through our strategic insights and thought leadership. We support the InnoEnergy investment teams in identify and analysing investment opportunities.

“

EGHAC's ambitions are fully in line with the EU's green re-industrialisation strategy. Our continued contribution and activities in new green hydrogen-based companies and start-ups is another signal of EIT InnoEnergy's commitment to decarbonising hard to abate industries.”

Carina Krastel

Managing Director, EGHAC





ESIA
European Solar PV
Industry Alliance

30Gw
Annual solar PV
manufacturing
capacity



400k
New jobs

**Raw
materials**
4
MEMBERS

**Ingo
& Wafer**
13
MEMBERS

Cell
13
MEMBERS

Module
39
MEMBERS

**BoP
Design**
28
MEMBERS

O&M
14
MEMBERS

Applications
17
MEMBERS

EoL
1
MEMBERS

Some of our Members

SWEDISH
ALGAE
FACTORY



NorSun

abora

ferroamp

supersola

PIONIERKRAFT

FINECELL



Nines
Photovoltaics



SMARTROOF

Ferroglobe



Holosolis

EXASUN

EnerBIM

SUNROOF

KEMTECNA

WACKER



DUALSUN



SOLARIS
OFFGRID



energetica



feedgy



ROSI

NEXWAFE



OXFORD PV

PVComplete

steadysun

BEON

Bottero

Evolar



S'TILE

Silbat

QPV
Qualifying PhotoVoltaics

EndeF

Solarge

Heliatek



SOLEAN

arisolar

ecoligo

solarworx

FutureVoltaics

European Solar PV Industry Alliance

Fostering an innovative solar PV value chain in Europe

Created by the European Commission and led by EIT InnoEnergy, the European Solar PV Industry Alliance facilitates an innovation-led expansion of a resilient industrial solar value chain in the EU, particularly in the PV manufacturing sector. The Steering Committee is made up of the European Commission itself, EIT InnoEnergy, Solar Power Europe and the European Solar Manufacturing Council.

The Alliance supports the growth of a European industry that is developing and commercialising breakthrough technologies along the whole value chain, leading to more innovative, efficient, circular and sustainable products, and making the EU's climate and energy objectives more attainable.

Ambition

The targets set by the alliance, together with the European Commission, are

30Gw annual solar PV manufacturing FID

(Financial Investment Decision) by 2025

€40bn front-loaded investment in PV production capacity required (total investment until 2025)

400,000 new jobs (direct and indirect).

Working across the entire value chain

The alliance will foster an innovative and value-creating industry in Europe, by scaling up manufacturing of innovative PV products and components. Bringing key industry stakeholders together, the alliance works across all value chain segments including polysilicon, ingots, wafers, cells, modules and recycling.

Priority actions



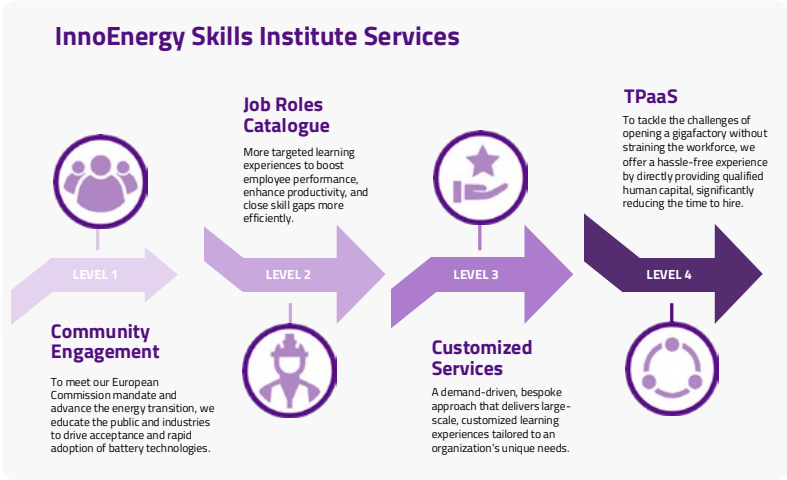
“To meet Europe's renewable energy objectives we are launching an industrial alliance for solar energy. With the alliance's support, the EU could reach 30 Gigawatt of annual solar energy manufacturing capacity by 2025 across the full PV value chain. The alliance will foster an innovative and value-creating industry in Europe, which leads to job creation here. Europe's solar industry already created more than 357,000 jobs. We have the potential to double these figures by the end of the decade.”

Thierry Breton

European Commissioner for Internal Market

Transforming Skills for a sustainable tomorrow

The InnoEnergy Skills Institute is committed to equipping businesses and industries in the green energy sector with the essential skills required to thrive in a fast-evolving landscape. Through tailored upskilling programmes, it supports the development of expertise in key areas such as battery technologies, solar energy, and green hydrogen, ensuring a highly skilled, future-ready workforce. The institute offers four core services: community engagement, a job roles catalogue, customised learning solutions, and Talent Pipeline as a Service (TPaaS) to meet diverse industry needs.



A pivotal player in **community engagement** and education, the Skills Institute leads efforts through the European Solar Academy and European Battery Academy. Established under a mandate from the European Commission, these are the first Net Zero Industry Academies, offering training and upskilling across the solar photovoltaic and battery technology value chains.



As part of its community outreach, the Skills Institute delivers interactive Minecraft-based learning games, impactful workshops, and social engagement campaigns. It also provides tailored training materials for teachers, specialised content for sectors such as banking and public administration, and a safety course for firefighters, all available through a new Learning Management System (LMS).



The institute offers a comprehensive **catalogue of key job roles** across the green energy sector, providing full content coverage for 25 critical roles and 60% coverage for 120 additional roles to meet broader workforce demands. By leveraging advanced skills intelligence, it identifies workforce gaps and delivers tailored learning experiences that boost productivity, ensuring businesses are prepared for both current and future needs.

Customised learning solutions are also designed to meet the unique needs of organisations. Whether delivered through on-site consultancy, face-to-face training, or digital learning platforms, these bespoke solutions help companies address specific skill gaps, improve employee performance, and align training with their operational goals.

Through **Talent Pipeline as a Service** (TPaaS), the institute offers an end-to-end solution for talent acquisition, training, and certification. This programme enables businesses to efficiently hire, train, and certify their workforce, reducing time-to-hire and ensuring employees are fully prepared to contribute from day one. TPaaS helps organisations, including gigafactories, overcome large-scale recruitment challenges by quickly equipping new hires with the skills they need.

Collaboration with industrial alliances such as EBA250 (European Battery Alliance), EGHAC (European Green Hydrogen Acceleration Centre), and ESIA (European Solar Industry Alliance) enhances the Skills Institute's ability to deliver customer value. These partnerships provide invaluable industry insights, market intelligence, and customer feedback, all of which are integrated into the design of its training programmes.

Partnering with the InnoEnergy Skills Institute offers clear benefits: rapid hiring and onboarding through TPaaS, tailored learning solutions to close skill gaps, and comprehensive certification programmes that ensure employees meet industry-leading standards. With access to a vast network of industry experts and cutting-edge insights, businesses can stay competitive, drive innovation, and prepare for the future of the energy transition.

The InnoEnergy Skills Institute is on a mission to upskill 100,000 professionals for 70 battery industry job roles by the end of 2024, empower 65,000 learners for 50 solar photovoltaic job roles by February 2025, and train 100,000 learners for 40 green hydrogen job roles by 2027.

By shaping the workforce of tomorrow, we are driving the future of sustainable energy.

For more details, please visit www.innoenergy.com/skillsinstitute.

Supporting innovations across the entire energy value chain

A

Electricity,
gas & heat
generation

Ocean power

Hydropower

Offshore wind

Onshore wind

Solar PV

Solar thermal electricity

Nuclear



Bioenergy & waste to energy

Hydrogen & e-fuels

Renewable gas & biofuels

B

Grid and
infrastructure

Power TSO

Power DSO

Gas TSO

Gas DSO

District heating grid

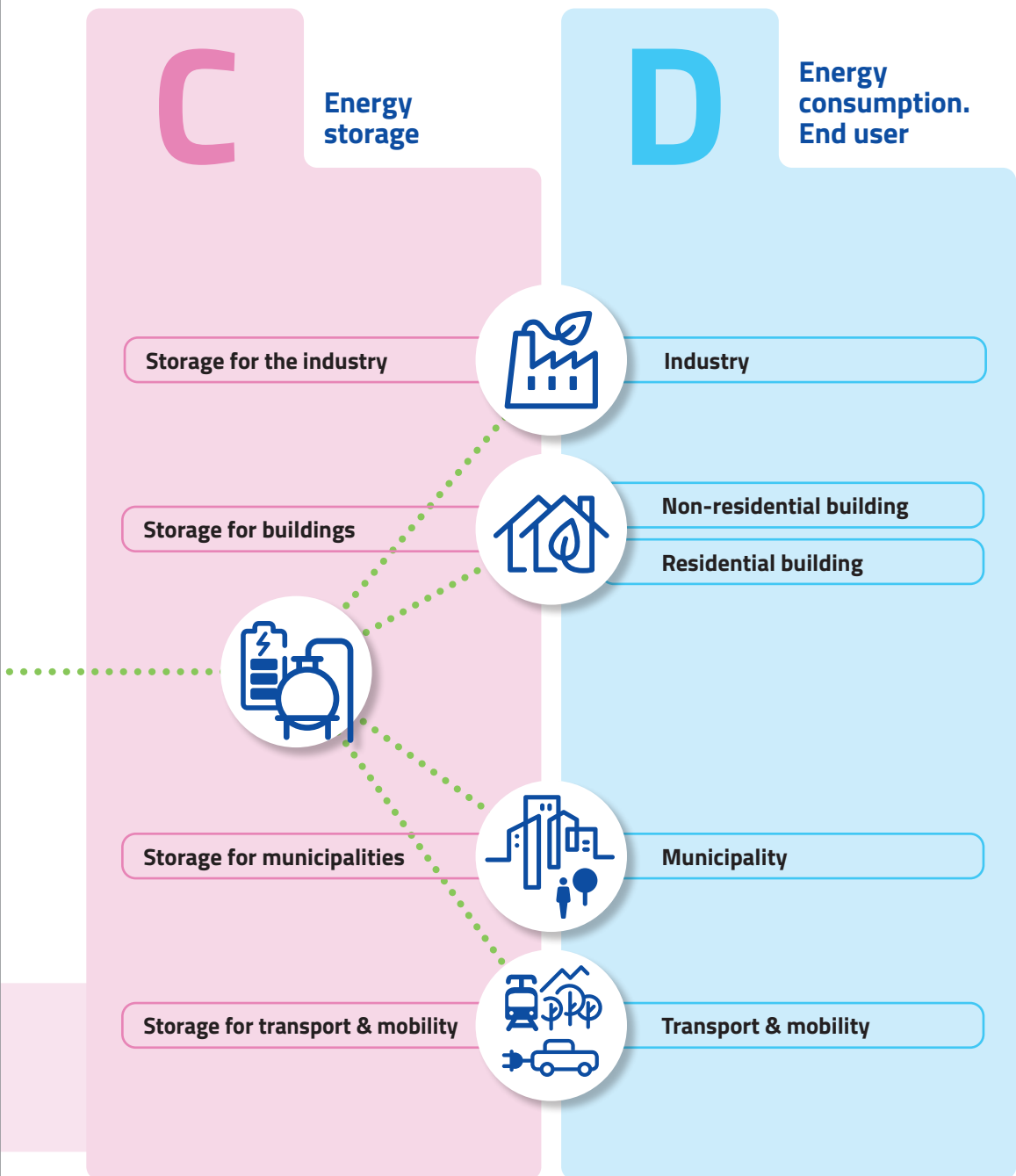


Off-grid

Storage for the grid

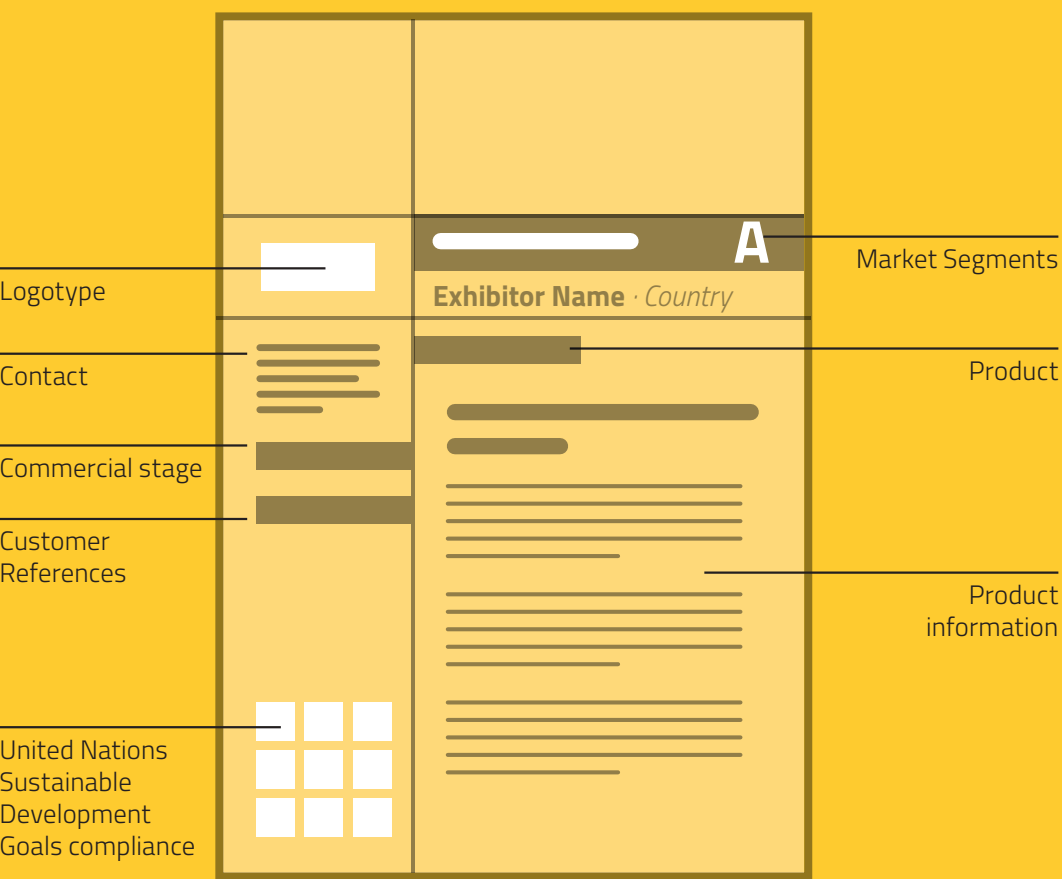
Storage for off-grid

The solutions in our portfolio span across the entire energy value chain, addressing the production and transportation of energy, as well as the energy needs of industry, buildings and cities and mobility. From energy generation to energy consumption see below a portfolio at the service of the energy transition.



How to use this catalogue

- Looking for a specific company? Check the alphabetical index on page 258
- Looking for all the companies in your country? Check the index by country on page 260



Each page corresponds to an innovative energy solution. You will find general information about the product (description, value proposition) plus contact details. You will be able to see which products are already commercialised and in most of these cases commercial references are also available.

Market segments

A

Electricity, gas & heat generation

- Ocean power
- Offshore wind
- Onshore wind
- Solar PV
- Nuclear
- Solar thermal electricity
- Hydropower
- Bioenergy & waste to energy
- Hydrogen & e-fuels
- Renewable gas & biofuels

B

Grid and infrastructure

- Power DSO
- Power TSO
- Gas DSO
- Gas TSO
- Off-grid
- District heating grid

C

Energy storage

- Storage for buildings
- Storage for municipalities
- Storage for off-grid
- Storage for the grid
- Storage for the industry
- Storage for transport & mobility

D

Energy consumption. End user

- Industry
- Municipality
- Non-residential building
- Residential building
- Transport & mobility

Ocean Power

CorPower Ocean	026
Equinox	027
Minesto	028
SeaCurrent	029

Offshore Wind

FiberSail	030
Principle Power	031
Technology from Ideas	032
Windcrete	033
X1 Wind	034

Onshore Wind

ACT Blade	035
Aerones	036
Nabrawind	037-041
RenerCycle	042
Vertequip	043

Solar PV

EasySolar	044
Ecoligo	045
Ener-Pacte	046
Feedgy	047
Future Voltaics	048
HoloSolis	049
Nexwafe	050
Nines PV	051
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Phytonics	053
PVComplete	054
ROSI	055
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Steadysun	057-059
Swedish Algae Factory	060
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Nuclear Fusion

Novatron	063
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Bioenergy & waste to energy

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Empyrio	065
Ingelia	066
Methaplanet	067
Meva Energy	068
Phoenix BioPower	069

Hydrogen & e-fuels

Atawey	070
Athena	071
Celcibus	072
FertigHy	073
HSL Technologies	074
Hymeth	075
Hysun	076
Kerionics	077
Phynix	078

Renewable gas & biofuels

Camelina Solutions	079
Enosis	080
iNex	081
Nesetten	082
Orchestra Scientific	083

A large, bold, orange letter 'A' is positioned in the upper right quadrant of the image. The background is a dark, blurred night scene of a city, featuring various light trails in red, yellow, and blue, suggesting motion and energy. The overall composition is dynamic and modern.

A

Electricity,
gas & heat
generation



MARKET SEGMENTS

Ocean Power

A

CorPower Ocean · Sweden

Västberga Allé 60
126 30 Hägersten
Sweden

patrik.moller@corpowerocean.com
www.corpowerocean.com

✓ PILOT

CUSTOMER REFERENCES

Simply Blue Group: Project Saoirse.
This project in Ireland will deliver 30MW by 2028 combining floating offshore wind and wave energy. It will be located 4km from shore, feeding electricity back to land via an export cable.

HiWave-5: this project, with Portuguese company EDP, will deploy commercial-scale C4 Wave Energy Converter off the coast of northern Portugal. This will later form part of a larger four-system WEC array, and one of the world's first active wave farms generating energy to the grid. HiWave-5 aims to deliver certified and warranted WEC products to the market by 2025.

PRODUCT

CorPower C4 WEC

Wave power. To power the planet.

THE NEED.

Commercially available wave energy constitutes ~500GW, which covers about 10 percent of global electricity consumption. Wave energy can be a balancing source that enables a high penetration of wind and solar at the lowest electricity system cost possible.

THE SOLUTION.

The CorPower Wave Energy Converter (WEC) can produce five times more electricity per tonne of the device (>10MWh / tonne) than any other known wave technology. It combines storm survivability with strongly amplified power capture in regular sea conditions. Obtaining large amounts of electricity from a small device significantly reduces capital expenses (CAPEX). The compact lightweight devices are also less costly to transport, install and service, reducing operating expenses (OPEX).

VALUE PROPOSITION.

- The world's most efficient wave energy converter proven at sea.
- Physics supporting highly-competitive levelised cost of electricity (LCOE), verified through step-by-step approach.
- Key enabler for the transition to 100% renewables, by natural grid balancing.
- A dedicated and experienced team.
- Market pull - sector leading customers engaging with the aim of developing utility and off-grid projects.
- Offering attractive funding mix with high leverage on private equity invested.





MARKET SEGMENTS

Ocean Power

A

Equinox · *The Netherlands*

François Haverschmidtwei 2
8914 BC Leeuwarden
The Netherlands
pdh@equinoxoceanturbines.com
www.equinoxoceanturbines.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request

PRODUCT Equinox Ocean Turbines

A promise of over 700GW stable clean energy

THE NEED.

There is an increasing need for a reliable and predictable energy solution that benefits both people and planet. Harvesting energy from the ocean offers one such solution, however, it can be inefficient and costly, with devices insubstantial in design.

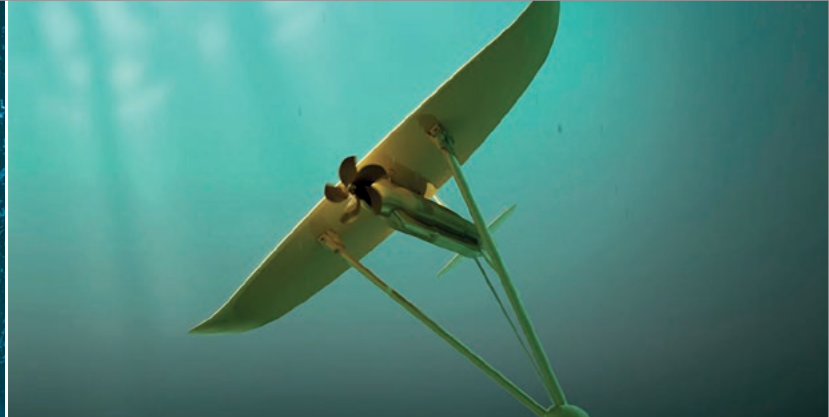
THE SOLUTION.

Equinox is dedicated to providing a reliable clean energy source in the form of ocean current energy. The company converts and utilises a unique design based on proven elements, techniques and design methods. This enables a highly-efficient capture of ocean current energy, maximising both power generation and earning potential.

VALUE PROPOSITION.

- Simple and unique: harvests energy from low-velocity unidirectional ocean currents.
- World's third clean global energy source: 700GW+ potential.
- High-capacity factor (> 65%): provides affordable and clean baseload energy.
- Competitive pricing: target LCoE sub € 50 / MWh.
- Low risk solution: builds on proven elements such as an intrinsically stable construction.
- Low- to zero environmental impact.
- Not visible above the water.
- Offshore energy technology made in the Netherlands.





MARKET SEGMENTS

Ocean Power

A

Minesto · *Sweden*

Vita gavelns väg 6
426 71 Västra Frölunda Göteborg
Sweden

info@minesto.com
www.minesto.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

EDF (Project H2020 Tiger)
2019 - 1 off DG100 (100 kW unit),
SEV (Faroe Islands)
2019 - 2 off DG100 (100 kW unit)

PRODUCT Deep Green

A revolutionary concept for producing electricity from the ocean

THE NEED.

The global demand for low-cost renewable energy is increasing. An expanding human population, the need for energy supply security and a way to combat climate change are driving forces behind the development of efficient new technology.

THE SOLUTION.

Deep Green sites are far more accessible than competing technologies and offer a highly efficient technique of increasing relative water flow speed into the turbine that provides a lower long-term levelised cost of energy (LCOE) at approx. €60/MWh. They offer low-cost offshore operations by using smaller boats and equipment and site characteristics monopoly with technology operating cost-efficiency in slow currents.

VALUE PROPOSITION.

- Global resource.
- Low-cost renewable energy.
- Small in size and weight, weighing 10-25 times less per MW than competing technologies.
- No land is required and there is no visual impact.
- Provides reliable, predictable and sustainable renewable energy (baseload power).
- Unlocks an untapped renewable energy source.





SeaCurrent[®]

MARKET SEGMENTS

Ocean Power

A

SeaCurrent · *The Netherlands*

Tussendiepen 18
9206 AD Drachten
The Netherlands
info@seacurrent.com
www.seacurrent.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Strategic Partnerships:
AEC (Amelandse Energie Cooperatie)
and NAM (JV tussen Exxon en Shell)

PRODUCT TidalKite™ system

Tidal energy. For good.

THE NEED.

TidalKite™ complements intermittent renewables in the energy mix contributing to the transition to 100% carbon-free energy. It provides higher energy revenues per kWh, produces baseload power, ensures energy security, overcomes spatial limitations, and minimises grid congestion.

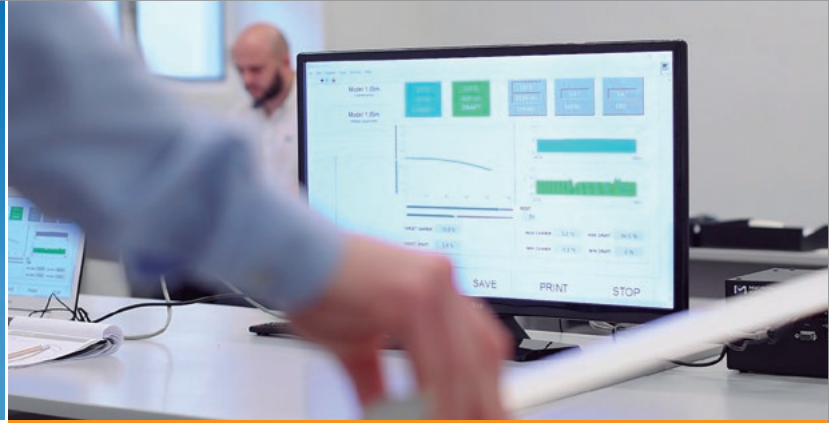
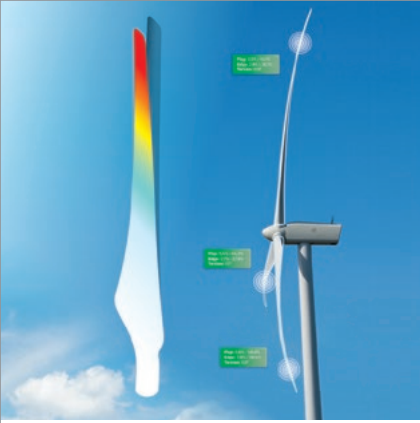
THE SOLUTION.

The patented TidalKite 3D-harnessing design captures up to 3x more energy than conventional tidal turbines, doubling market potential by enabling deployment in all tidal segments. Its lightweight, scalable design allows towing by standard vessels, use of widely available equipment, easier installation, onshore maintenance, and significantly lower costs. The design is eco-friendly and 100% recyclable.

VALUE PROPOSITION.

- Strong EU regulatory support and national financial incentives: governments provide significant funding and guaranteed prices for tidal projects.
- Initial TidalKite projects, structured as ESCO-SPC ventures, are anticipated to generate revenues by 2026 with a healthy gross margin, growing from 2030 due to increasing volumes and cost efficiencies.
- Planned transition into a sales and R&D company, selling units and outsourcing manufacturing.
- Positioned to lead the growing tidal energy market, investors are offered substantial returns aligned with energy transition goals.





MARKET SEGMENTS
Offshore Wind

A

FiberSail · *The Netherlands*

Stationsplein 45
3013 AK Rotterdam, Benelux
The Netherlands
carlos.oliveira@fibersail.com
www.fibersail.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Shell, Siemens Gamesa

PRODUCT Fibersail shape sensor

Shaping the structures of tomorrow

THE NEED.

Unidentified loads on blades leads to underperformance (2% to 10%) and an increased risk of failure, elevating maintenance costs (10%) during operations. The high safety levels required mean structures must be built to survive excessive, unwanted loads.

THE SOLUTION.

Fibersail is a shape-sensing system based on fibre optic technology able to measure the deformation of blades during operations. It has a simple process of installation that enables the turbine to prevent excessive loads through the control system.

VALUE PROPOSITION.

- Maximised performance and reduced loads by detecting pitch and yaw misalignments.
- Prevents failures by reducing extreme loads.
- Prevents extreme failures by detecting structural behaviour differences.





MARKET SEGMENTS

Offshore Wind

A

Principle Power · *United States*

5901 Christie Ave. Suite 303
94608 Emeryville
United States

info@principlepowerinc.com
www.principlepowerinc.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

WindFloat technology has been fully proven through our full-scale prototype (2 MW Vestas V80 turbine) located 5 km offshore in Portugal. In 5 years of operation, the prototype delivered over 17 GWh of electricity to the grid and survived waves of 17 m without sustaining any structural damage. Upon completion of test objectives, the prototype was decommissioned and towed to the port of Sines, PT using a standard tug, proving the feasibility and cost savings offered by the simple procedures for maintenance and decommissioning.

PRODUCT WindFloat

WindFloat is a floating foundation for offshore wind turbines with a simple, economic and patented design

THE NEED.

The offshore wind market is restricted to locations with low water depths. Offshore wind players aspire to develop deeper water sites that offer advantages such as high quality wind resource, and reduced visual and environmental impact.

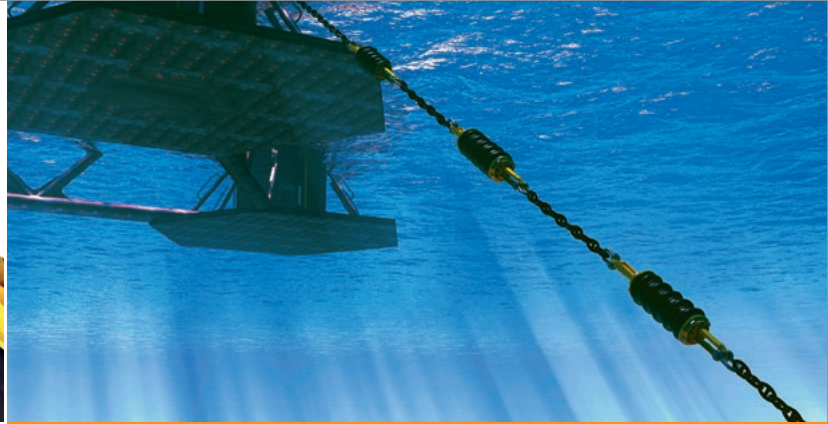
THE SOLUTION.

A patented floating platform for wind turbines that offers: shallow draft, enabling commissioning of the system at port; a simple, easily disconnected mooring system; simplified logistics with low cost, widely available vessels; standard tubular components for simple fabrication and a structural design to minimise weight.

VALUE PROPOSITION.

- Flexible access to deepwater offshore wind sites.
- No crane vessels for installation or maintenance.
- Reduced risk throughout project lifecycle.
- Stable platform for high performance.
- Turbine agnostic and suitable for any commercial offshore wind turbine.





MARKET SEGMENTS

Offshore Wind

Hydropower

A

Technology from Ideas · *Ireland*

6 Charlemont Terrace,
Crofton Road
Dun Laoghaire, Dublin
Ireland

mary.power@tfimarine.com
www.tfimarine.com

✓ PILOT

CUSTOMER REFERENCES

Naval Energies
Principle Power

PRODUCT Big Wind

Innovating the design of mooring systems

THE NEED.

Mooring systems become troublesome and expensive because of the induced loads by the sea and wind turbine positioned on the platform. The dynamic response of the mooring system has an impact on the total levelised cost of electricity (LCOE).

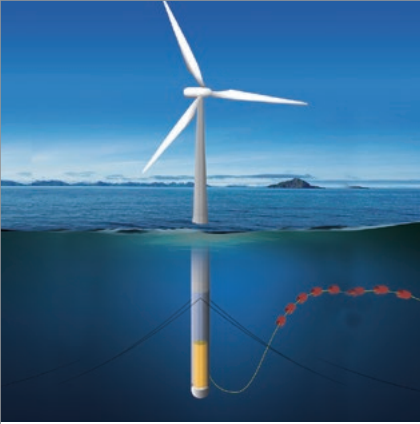
THE SOLUTION.

A Technology from Ideas (TFI) solution that introduces springs in the mooring line that provide a different dynamic response on the platform. This eliminates shock loading, reduces peak loading (30% to 70%), and improves fatigue (50% - 90% lower) of the mooring system.

VALUE PROPOSITION.

- Risk Reduction
- Risk of failures reduced.
- Assets protected from rough sea states.
- Associated savings from repairs, insurance premiums etc.
- Significant capital expenditures (capex) saving.
- Smaller chains, anchors, & mooring connections.
- Less structural steel across entire platforms.
- Smaller components can be used meaning cheaper deployment.
- Significant operating expense (opex) saving.
- Lower maintenance requirements, labour, vessel, components etc.
- Longer life expectancy of infrastructure.





windcrete

MARKET SEGMENTS

Offshore Wind

A

Windcrete · Spain

C. Jordi Girona 1-3
08034 Barcelona
Spain
climent.molins@windcrete.com
www.windcrete.com

✓ EARLY STAGE

CUSTOMER REFERENCES

Available on request

PRODUCT Windcrete

Innovative concrete spar substructure for floating offshore wind turbines

THE NEED.

There is a requirement to decrease the costs of production and implementation of floating offshore wind farms in deep waters.

THE SOLUTION.

Floating platforms that can be positioned in deep water. Installing wind farms further from the shore results in increased exploitation of the wind power present over the ocean, leading to a larger power production from renewables in the country in which they are installed. Turbines up to 10 MW can be sustained that have longer lifespans of over 50 years, a levelised cost of energy (LCOE) of € 0.12/kWh, and a monolithic design made of prestressed reinforced concrete.

VALUE PROPOSITION.

- Decreases the capital expenses and operating expenses of offshore wind farms.
- Decreases the maintenance operations.
- Exploits location not yet reachable from bottom-fixed offshore wind turbines.





MARKET SEGMENTS

Offshore Wind

A

X1 Wind · Spain

Llacuna, 162
08018 Barcelona
Spain
alex.raventos@x1wind.com
www.x1wind.com

✓ STARTING SALES

CUSTOMER REFERENCES

NextFloat Project (2022 - 2031)

Objective: deploy a 6 MW (called X90) pre-commercial platform, while advancing in parallel on the industrialization and scaling-up of the integrated solution up to 20MW+ scale. Main Partners: Technip Energies, Naturgy

PivotBuoy Project (2019 - 2023)

Objective: demonstrate the innovative PivotBuoy® through the design, fabrication, and testing of the X30 part-scale floating wind platform. Main Partners: EDP New

PRODUCT X1 Wind

Scalable and cost-effective offshore wind

THE NEED.

The European Commission has highlighted offshore renewable energy as a key area of interest to meet its goal of climate neutrality by 2050. Utilities and power producers require floating wind solutions to exploit sites located in deep waters. However, current technology is uncompetitive in price.

THE SOLUTION.

X1 Wind has developed an innovative floating wind platform for the offshore wind market with the aim of significantly reducing capital expenditures and levelised cost of energy (LCOE). The main objective is to make floating offshore wind cost-effective and untap the huge wind potential of deep-water locations. X1 Wind's approach is based on a downwind-configured weathervane platform that makes an efficient structural design possible while minimising the environmental impact on the ocean.

VALUE PROPOSITION.

- Lighter floater: reducing the weight of current substructure solutions.
- Easier installation: with an innovative single point mooring (SPM) system called PivotBuoy®.
- Reliable: using passive orientation and removing unnecessary active systems (yaw and ballast).
- Scalable: with the integration of larger downwind turbines and TLP moorings that scale better in deeper waters compared to catenaries.
- Lower environmental impact: reducing environmental footprint through the TLP mooring system and use of local infrastructure.





ACT Blade Ltd

MARKET SEGMENTS

Onshore Wind

A

ACT Blade · *United Kingdom*

Hill St 14-18
EH2 3JZ Edinburgh
United Kingdom
s.malpede@actblade.com
www.actblade.com

✓ PILOT

CUSTOMER REFERENCES

Enel Green Power

PRODUCT ACT Blade

The lightest and most controllable wind turbine blade

THE NEED.

Larger turbines with longer blades are a popular means to reduce levelised cost of electricity (LCOE) values. However, composite blades suffer from significantly increased weight and cost, increasing fatigue on other turbine components and raising the cost of installation.

THE SOLUTION.

The ACT Blade is a tensioned textile-covered wind turbine blade with a shape that can be actively changed to control loads. It is 24% lighter than conventional blades, enabling longer blades and directly contributing to the production of 9% more energy with a 7% reduction in the cost of energy. As they are component based, ACT Blades could result in additional manufacturing savings with 63% tooling costs and 40% factory footprint reductions.

VALUE PROPOSITION.

Lighter, cheaper to produce and easier to transport, the ACT Blade is a leap forward in blade technology with real potential to increase the use of wind energy and displace the carbon emission of conventional power generation. Component based, they offer an opportunity to expand into remote zones contributing to local jobs and skills. ACT Blades modular manufacturing techniques are designed for a sustainable end-of-life approach.





AERONES

MARKET SEGMENTS

Onshore Wind

A

Aerones · Latvia

Katlakalna 11E
LV-1037 Riga
Latvia

info@aerones.com
www.aerones.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Wind Turbine OEMs:

GE, Vestas, Siemens Gamesa,
Nordex Acciona

Wind park owners and Operators:

Iberdrola, Naturgy, NextEra,
Acciona, Enel

PRODUCT

Robotic wind turbine maintenance and inspection

Harnessing the power of AI for wind turbine blade inspections

THE NEED.

There is a need for a safe, resource and labour-efficient way to maintain, inspect and repair wind turbines as a vital means to extend their lifetime and maximise energy production.

THE SOLUTION.

Aerones has developed a unique set of robotic technologies for wind turbines with a wide range of services provided, covering inspections, coating application, cleaning, de-icing and blade repair. This versatile solution includes different robotic toolhead attachments, inspection equipment and a robotic manipulator arm to perform complex WTG maintenance services.

VALUE PROPOSITION.

- Reduced downtime.
- Human-safe.
- Enhanced efficiency.
- Cost effective.
- Durability of the blade.
- Increases wind turbine energy production by up to 20% without increasing costs.
- Increased turbine lifetime.
- Scalability.





Av. de Carlos III el Noble 11, 2 izda
31002 Pamplona, Navarre
Spain

mturullols@nabrawind.com
www.nabrawind.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Innovent, Acciona Energía, Nordex

MARKET SEGMENTS

Onshore Wind

A

Nabrawind · Spain

PRODUCT Nabralift

Self Erecting Tower, a new technology that breaks the barriers to the growth of the wind turbines hub height

THE NEED.

New wind farm emplacements are for areas of low force wind. However, the best wind is located at 200 metres, so taller towers must be constructed. They present a challenge from a logistic and economical point of view.

THE SOLUTION.

Nabralift combines a light but rigid steel structure with a self-erecting system. This way, Nabralift solves significant logistical constraints as they can be transported in standard trucks. It also offers a cost-effective option since it avoids the requirement for tall cranes and reduces the foundation required. All in all, Nabralift saves up to 20% in costs when compared with alternative solutions, such as concrete hybrid towers.

VALUE PROPOSITION.

- Tower full-cost (also including foundation, logistics and installation) is reduced by a 15/30%.
- Fast installation: installation in three days, even in windy conditions.
- 15m/s average speed. Reduces inefficiency by up to 50%.
- Maintenance free.
- Total cost reduction of up to 20%.





Av. de Carlos III el Noble 11, 2 izda
31002 Pamplona, Navarre
Spain

mturullols@nabrawind.com

www.nabrawind.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Acciona

MARKET SEGMENTS

Onshore Wind

A

Nabrawind · Spain

PRODUCT BladeRunner

A craneless blade installation system

THE NEED.

Blade maintenance and replacement may represent a relevant cost for a wind project, as standard cranes used for these kinds of manoeuvres are quite expensive. A system is required for blade maintenance and replacement that drastically reduces costs.

THE SOLUTION.

BladeRunner is a blade maintenance and installation system that does not require a crane. It is based on the installation of small pieces of equipment on the hub of the wind turbine that enables the vertical ascent and descent of the blade. The system is connected directly to the blade root inserts or T bolts which avoids applying force to their aerodynamic surface, eliminating the risk of cracks appearing in the handling area.

VALUE PROPOSITION.

- Patented system: offers a drastic cost reduction compared to standard cranes in blade replacement operations.
- Fast system: the repair of a blade or the installation of a complete rotor takes just three days.
- Simple logistics: the reduced weight of the BladeRunner (the whole system is under 1.000 kg) enables its transportation by van.
- Low labour costs: a team of just four people are needed to operate it.





MARKET SEGMENTS

Onshore Wind

A

Nabrawind · Spain

Av. de Carlos III el Noble 11, 2 izda
31002 Pamplona, Navarre
Spain

mturullols@nabrawind.com

www.nabrawind.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Available on request.

PRODUCT Nabrabase

An elevated foundation for wind towers

THE NEED.

The soil characteristics or even the availability of concrete in some emplacements may pose a challenge for the development of wind farms. Nabrabase solves this problem and, furthermore, significantly improves the environmental impact of the wind energy project.

THE SOLUTION.

Nabrabase is a highly cost competitive alternative for wind farms where concrete supply may pose a challenge. It comprises of an innovative wind tower elevation foundation where a tripod is installed under the tubular tower resulting in a hybrid support structure. The tubular tower segment is connected to the frame tower segment through a metallic transition segment.

VALUE PROPOSITION.

- Footprint reduction: Nabrabase Pile or Anchor rock foundation reduces up to 80% CO₂ emissions during the installation of the wind turbines.
- Speedy installation: setting the foundation is reduced to one week and the complete installation of a wind turbine to two weeks.
- Foundation simplification: the concrete requirements for the foundation are reduced by 60%.





Av. de Carlos III el Noble 11, 2 izda
31002 Pamplona, Navarre
Spain

mturullols@nabrawind.com
www.nabrawind.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request.

MARKET SEGMENTS

Onshore Wind

A

Nabrawind · Spain

PRODUCT Nabrajoint

Game-changing technology suitable for a new generation of XXL blades

THE NEED.

A new generation of blades incurs high logistical costs and difficulties in transportation to onshore wind farms. Blades can exceed 70 metres in length and in some cases can make the project unfeasible.

THE SOLUTION.

Nabrawind Modular Blade System (Nabrajoint) is a technology applicable to any wind turbine blade (existing or new). A game-changing technology suitable for a new generation of XXL blades, it allows blades to be manufactured in two or more parts that can be transported separately and assembled on site. Nabrajoint technology is based on a bolted connection between blade modules with conventional, controlled and robust assembly methods.

VALUE PROPOSITION.

- Removes logistic barriers for blade lengths of over 70m.
- Relevant logistic savings.
- Sites previously difficult to access may now become feasible with this modular solution, enabling the development of promising new sites.
- Important competitive advantages in the incipient business of repowering wind farms, offering significant savings in wind farm site adaptation and access modifications.





Av. de Carlos III el Noble 11, 2 izda
31002 Pamplona, Navarre
Spain

mturullols@nabrawind.com
www.nabrawind.com

✓ PILOT

CUSTOMER REFERENCES

Available on request.

MARKET SEGMENTS

Onshore Wind

A

Nabrawind · Spain

PRODUCT Skylift

A craneless wind turbine installation system

THE NEED.

Ironically, wind turbine installation systems are negatively affected by wind, and the inability to install turbines in windy weather is costly. A system is required that is able to operate in the windiest of conditions.

THE SOLUTION.

Skylift is a completely craneless wind turbine installation system. It is compatible with any kind of standard wind turbine. The system is integrated by two components. Firstly, a self-erecting system, capable of installing both nacelle and tower even in extremely high winds (wind speeds of up to 15 m/s). Following that, the BladeRunner installs the rotor, again without the need of any kind of crane.

VALUE PROPOSITION.

- Craneless: wind turbine, rotor and tower are fully installed with the self-erecting system, avoiding any kind of crane.
- Wind insensitive: Skylift has an operative installation window in wind speeds of 15 m/s and a survival system that can withstand gusts of up to 23 m/s.
- Speedy installation: an installation rate of 1 turbine per week, even in extremely windy conditions.





Calle Media Luna 19, 3B
31002 Pamplona, Navarra
Spain

info@renercycle.com
www.renercycle.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Strategic partnerships with ACCIONA Energy, RWE, Enhol Group and Enerfin (Statkraft), Nordex and Ingeteam



MARKET SEGMENTS

Onshore Wind
Industry

A

RenerCycle · *Spain*

PRODUCT RenerCycle

Developing industrial and technological solutions to boost the circular economy in renewables

THE NEED.

By 2030 more than 50,000 wind turbines in Europe will have reached or exceeded their 20 years of useful life. This means that some 500,000 tons of turbine blades will have similarly reached the end of their useful lives. From 2025, this component cannot be landfilled and must be recycled.

THE SOLUTION.

RenerCycle proposes a new circular model of non-linear production and consumption for onshore projects. In addition to the dismantling of wind farms, and the repairing and reconditioning of wind turbine components as spare parts, the plan includes recycling metallic materials such as steel and castings, the composite materials of wind turbines (blades and nacelles) as well as organic materials such as gearbox oils, among other industrial initiatives.

VALUE PROPOSITION.

- Circular economy services that help transform the industry into one completely sustainable.
- Wind farms dismantling and site restoration.
- Refurbishing of wind turbine components for spare parts market.
- Recovery of materials.
- Recycling of composites and other materials.





MARKET SEGMENTS

Onshore Wind

Municipality, Non Residential building, Offshore Wind

A

Vertequip · Portugal

Rua do Tejo Lote E
2140-011 Chamusca
Portugal

info@vertequip.com
www.vertequip.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

EDP renewables, Martifer, Teixeira
Duarte, Norafrica, Libertas, NOS

PRODUCT S.T.E.P.

System of translation and elevation of people

THE NEED.

There is a need to address the serious risk of working at heights and its low productivity rate.

THE SOLUTION.

A unique system allows workers, including handicapped and amputees to work at heights more safely and efficiently. The system uses only one harness, moving workers both horizontally and vertically, while controlling everything through a remote control. Adequate for any type of structure: building, bridge, silo, wind tower or oil rig. Cheaper and lighter than equivalent technologies and safer than abseiling or rope access.

VALUE PROPOSITION.

- 40% cost reduction in cleaning and maintenance works.
- Lighter system to the structures.

Social inclusivity.





easysolar

MARKET SEGMENTS

Solar PV

A

EasySolar · *Poland*

Głogowska 216
60-104 Poznań
Poland

marcin.dolata@easysolar-app.com
www.easysolar.app

✓ **STARTING SALES**

CUSTOMER REFERENCES

Over 800 clients (companies)
from Poland, Spain, Germany
and many others.

PRODUCT EasySolar

AI-powered solar software for websites and teams

THE NEED.

The global solar PV market is estimated to reach \$262.3 billion by 2032. However, the sale of solar PV systems is mostly made by small local companies with limited resources. There may be no easy way to design installations or make calculations, and wholesalers may have outdated ordering processes.

THE SOLUTION.

EasySolar offers software as a service aimed at small companies selling photovoltaic installations. Thanks to the use of AI technology, the service provides companies with a quick and easy way to design the installation, perform calculations and order components from the wholesaler under the best conditions and at the best price possible. The process of selling installations is simplified, and the work of thousands of specialists and traders around the world is made available.

VALUE PROPOSITION.

- Simplifies PV sales process.
- Saves a significant amount of time.
- Increases sales closing rate.
- Reduces operational costs.
- Increases sales and revenue.
- Easy access to ordering with one click.
- Best components order conditions and prices.





MARKET SEGMENTS

Solar PV

A

Ecoligo · *Germany*

Zimmerstrasse 90
10117 Berlin
Germany

hello@ecoligo.com
www.ecoligo.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

720 kWp - Fresha Dairies, Kenya

1,134 kWp - Nam Dinh Forest,
Nam Dinh, Vietnam

994 kWp - Dong Nam Viet Packaging,
Ben Cat Town, Vietnam

393 kWp - Thien Nam Elevator,
Duc Hoa, Vietnam

266 kWp - fairafric, Ghana

276 kWp - Central University, Ghana

150 kWp - Vision Plaza, Kenya

204 kWp - Arenal Kioro

For other ecoligo projects see here:
<https://ecoligo.com/projects/>

PRODUCT Solar-as-a-service

Offering affordable solar-as-a-service solutions for commercial and industrial clients in developing countries

THE NEED.

Commercial and industrial (C&I) businesses in emerging markets are growing fast and need access to cheaper, more sustainable clean energy. While they'd benefit most from solar energy, they often have no access to financing.

THE SOLUTION.

ecoligo offers commercial and industrial businesses in emerging markets access to clean and affordable solar-as-a-service solutions financed by crowdfunders. This allows businesses to lower their energy costs and gives them more time to focus on growth. ecoligo manages projects from start to finish, while tailoring each system to meet the specific needs of the business.

VALUE PROPOSITION.

- Combining global reach and local expertise, ecoligo saves businesses money on electricity bills while also benefitting the planet.
- A one-stop-shop for clean, affordable solar energy, the company handles everything from financing to installation and maintenance.
- Guaranteed performance on tailor-made projects and significant lowering of energy costs.





MARKET SEGMENTS

Solar PV

A

Ener-Pacte · *France*

Rue des cuirassiers 15
69003 Lyon
France
remi.berthon@ener-pacte.fr
www.ener-pacte.fr

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Eglantine energie, EARL de la métairie,
GAEC Ferme de l'ouest, ELO PV,
Gestion Energie, SC Les Puechs,
Layelec, Lagon bleu, Watt SMB, Solib1

PRODUCT Serenity

Management and 360° optimisation of medium-sized PV plants

THE NEED.

PV owners of the early days of the solar boom in Europe are mostly non-professionals that lack the knowledge, time and money to manage their assets properly and so run into a number of risks that may significantly reduce their solar revenue.

THE SOLUTION.

Ener-pacte offers a solution that improves existing PV plants in multiple ways. A smart way to sell technical actions to non-professionals, it enables the auditing, improvement and managing of PV assets in an automated, simple and efficient way. It includes costs optimisation, financial optimisation, predictable future cashflows and technical optimisation.

VALUE PROPOSITION.

- Delegated management of the PV plant.
- Legal and technical compliance of the PV plant.
- Reduction of personal guarantees for banks.
- Total security of the existing profitability of PV owner.





MARKET SEGMENTS

Solar PV

A

Feedgy · France

Rue La Fayette 83
75009 Paris
France

hdarras@feedgy.solar
www.feedgy.solar

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Location : **Uhlwiller** (67) 1,7 MWp
plant => 406 houses supplied with
electricity ; 1,36 t CO2 Reduction ; 3M€
projected additional revenue (2021)

Power before: 1099.8 kWp

Power after : 1287 kWp. + 17%

Location : **Lavannes** (51) 546 kWp plant
=> 130 houses supplied with electricity
; 436,8 kg CO2 Reduction ; 266k€
projected additional revenue (2022)

Power before: 248.83 kWp

Power after : 352.58 kWp. + 42%

Location: **Annelles** (08) 358 kWp
plant => 86 houses supplied with
electricity ; 286,75 kg CO2 Reduction
; 13k€ projected additional revenue
// 2022

Power before: 235.2 kWp

Power after : 258.72 kWp. + 10%

PRODUCT Feedgy

Innovations to make solar plants more profitable for much longer

THE NEED.

Solar plants suffer production losses over time. This can be due to undetectable degradation that may be unknown in origin. When monitoring is implemented it may not take the various factors that lead to underperformance into account, nor quantify its financial cost.

THE SOLUTION.

Feedgy has developed effective repowering solutions for solar plants ranging from 100KWc to 10 MWc. Solutions include advanced digital tools that accurately identify faults and optimise solar energy production. Innovative technologies, such as high-performance panels, photonics and artificial intelligence enhance the efficiency and performance of solar installations.

VALUE PROPOSITION.

- Up to 62% increase in energy production.
- Extension of the lifespan of solar plants by 10 years.
- Optimisation of profitability of solar assets with payback <5 years.
- Premium support in all aspects of the project (legal, financial, insurance, etc.).
- Innovative digital platform for performance monitoring.
- High performance panels.
- Agri PV solutions.





FutureVoltaics

Av. Real de Pinto 162, Nave N3
28021 Madrid
Spain

manuel.hinojosa@futurevoltaics.com
www.futurevoltaics.com

✓ STARTING SALES

CUSTOMER REFERENCES

We have entered the market with a pre-commercial sale to a major solar tracker manufacturer. The details of this transaction are subject to an NDA.

MARKET SEGMENTS

Solar PV

A

Future Voltaics · Spain

PRODUCT

Vecthor

More power when it matters

THE NEED.

PV systems overproduce power at noon in the warmer months, and underperform at sunset, sunrise and during winter. There is a need to flatten the solar energy production curve and align electricity demand with generation. This would minimise grid stress and reduce reliance on energy storage systems.

THE SOLUTION.

VECTHOR is an innovative photovoltaic system that utilises vertical bifacial solar panels, along with patented engineered reflectors. This enables it to increase power output irrelative of radiance conditions. The technology maximises the overall annual energy yield of the plant (kWh/kW) and reduces the cost of electricity (LCOE). It additionally optimises energy production when the price of electricity tends to be higher: at sunrise, sunset, in cloudy weather and in winter.

VALUE PROPOSITION.

- Increases power output in all conditions.
- Maximises annual energy yield of the plant.
- Reduces electricity cost.
- Optimises energy production at costly times of the day or year.





MARKET SEGMENTS

Solar PV

A

HoloSolis · *France*

5 rue du Louvre
75001 Paris
France
contact@holosolis.com
www.holosolis.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Strategic partnerships
(Non-exhaustive list)
TSE
IDEC Energy
Technique Solaire
Photosol

PRODUCT HoloSolis

PV made in Europe, by Europeans for Europeans

THE NEED.

China is currently responsible for over 80% of the world's installed photovoltaic modules – compared to just 3% in the European Union. At a time where energy security is high on the agenda, there is a need to significantly increase Europe's solar capacity.

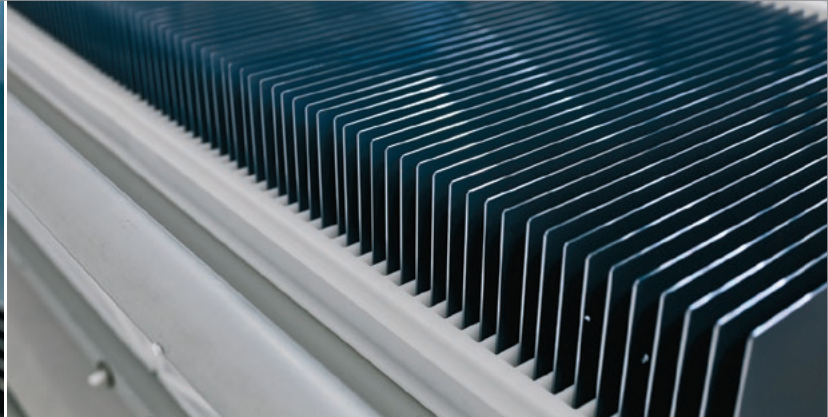
THE SOLUTION.

HoloSolis plans to build Europe's largest PV module gigafactory which will be located in Sarreguemines, France. The factory will have a production capacity of 5GW per year, producing 10 million photovoltaic modules annually. It will employ over 1,900 people. HoloSolis will accelerate Europe's solar capabilities to ensure and prioritise energy security on the continent.

VALUE PROPOSITION.

- Production of the most reliable, high powered solar modules in Europe.
- Lowest carbon footprint and best social footprint possible.
- Dynamises Europe's industrial rebirth and Europe's energy self-reliance.





MARKET SEGMENTS

Solar PV

A

Nexwafe · *Germany*

Hans Bunte Strasse 19
79108 Freiburg im Breisgau
Germany

info@nexwafe.com
www.nexwafe.com

✓ PILOT

CUSTOMER REFERENCES

Strong interest from leading solar cell producers to test NexWafe's wafers.

PRODUCT EpiWafers

Green solar wafers to power the energy transition

THE NEED.

Silicon wafers are the most expensive and energy intensive single component of a solar module. Current wafer manufacturing processes have a very limited cost reduction potential. Disruptive technologies are needed to bring costs and energy consumption down.

THE SOLUTION.

Conventional wafer production uses energy intensive processes such as polysilicon production from chlorosilane, ingot pulling and wire sawing. NexWafe bypasses these process steps by cloning silicon wafers; growing wafers directly from chlorosilane by epitaxy. In-line equipment has been developed to achieve high throughput in production. This disruptive approach to wafer manufacturing reduces energy consumption and GHG emissions in wafer production by 60%, and cuts production costs by half.

VALUE PROPOSITION.

- Reduced power consumption and CO₂ emission in wafer production.
- Cost savings.
- High solar cell efficiencies.





Nines
Photovoltaics

Synergy Centre T.U. Dublin,
Tallaght Campus
D24 A386 Dublin
Ireland

info@nines-pv.com
www.nines-pv.com

✓ PILOT

CUSTOMER REFERENCES

Fraunhofer ISE
2015 - Freiburg, Germany
1 x R&D pilot machine ADE100

Fraunhofer ISE
2023 - Freiburg, Germany
1 x R&D pilot machine ADE100 for
M10/G12 wafers

MARKET SEGMENTS

Solar PV

A

Nines PV · Ireland

PRODUCT ADE 6000

Highly efficient water-free gaseous silicon wafer etching for solar cell Gigafactories

THE NEED.

Solar cell Gigafactories required for the energy transition pose an environmental challenge. Wet etching technologies require high water consumption and process inefficiently. Large numbers of very long machines are required and take up significantly more factory space.

THE SOLUTION.

ADE is a high efficiency/low cost dry etching technology. Its very high etching rates enable Gigafactory throughputs, small machine size and reduced water impact. Unlike existing dry processes such as RIE, developed for the semi-conductor industry, the ADE process does not require costly vacuum or plasma equipment and emits no greenhouse gases. ADE is a single side process, enabling the latest solar cell architectures such as TOPCON and IBC.

VALUE PROPOSITION.

- High throughput capacity = less tools required per GW of factory capacity.
- Small tool footprint = reduced number of tools, factory size and associated costs and CO₂.
- No water usage, no GHG = sustainable PV manufacturing.
- On-site gas generation = scalable manufacturing.
- Single side and selective etching = enables newest cell architectures like TOPCON and IBC.
- Patented European innovation.





MARKET SEGMENTS

Solar PV

Non Residential building

A

Peafowl Plasmonics · Sweden

Ulls väg 33C
756 51 Uppsala
Sweden

cristina.paun@peafowlplasmonics.com
www.peafowlplasmonics.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request

PRODUCT

Peafowl Plasmonics

Harvesting ubiquitous light to make electronic devices sustainable and self-powered

THE NEED.

Buildings use 40% of electricity and emit 30% of CO₂ globally. Sensors and dynamic windows optimise indoor climate and cut energy consumption by 20%-40%. Self-powered devices, without batteries or cables, lower installation and maintenance costs, enable retrofitting, and reduce toxic/rare materials.

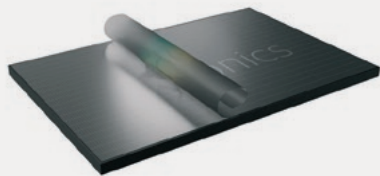
THE SOLUTION.

Peafowl Plasmonics' solution harvests ubiquitous light to add invisible power whenever and wherever it's needed, enabling smart buildings to improve energy efficiency. The patented photovoltaic technology used is the most transparent on the market (over 90% transparent) and can be placed indoors, outdoors, and on almost any surface, enhancing aesthetics and increasing design options. Peafowl's light harvesting cells provide enough energy to power sensors, e-paper displays and dynamic windows.

VALUE PROPOSITION.

- Self-powered devices through light harvesting.
- Optimises and reduces energy consumption.
- Allows for easy installation and retrofitting.
- Transparency enhances value in aesthetics and design.





Durmshheimer Str. 55
76185 Karlsruhe
Germany

info@phytonics.tech
www.phytonics.com

✓ PILOT

CUSTOMER REFERENCES

Strategic Partnerships:

Qcells

Solyco

3S

IBC Solar AG

Evia Aero



MARKET SEGMENTS

Solar PV

A

Phytonics · *Germany*

PRODUCT

Anti-glare coating for PV panels

Multifunctional bionic coating for glare-free and more efficient solar modules

THE NEED.

A significant amount of light is lost as it is reflected off the outer surface of solar modules. This not only reduces power output, but the glare and glint of reflected light prevents the use of high value and profitable dual-use areas for PV installations.

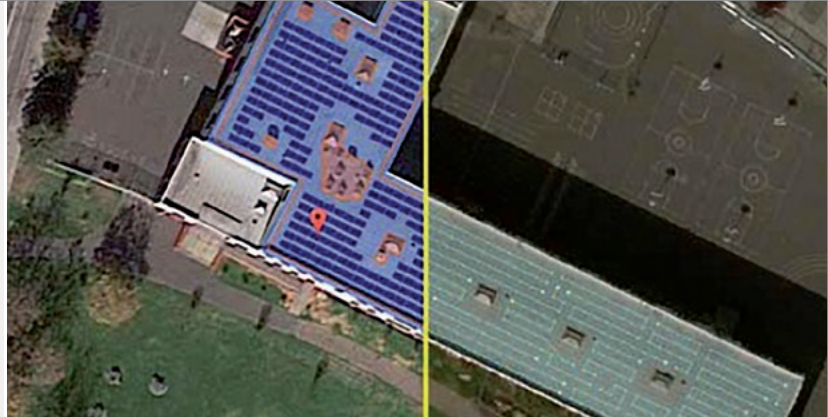
THE SOLUTION.

Phytonics has developed a bio-inspired coating with hierarchical micro-/ nanotextures. It effectively prevents reflection, even where current state-of-the-art solutions fail to. This is achieved with a highly durable and outdoor-stable polymeric outer layer on the solar modules. The anti-glare solution is a self-adhesive polymer foil that can be laminated on new solar modules as well as retrofitted to existing ones.

VALUE PROPOSITION.

- Solar modules equipped with Phytonics' technology are absolutely glare-free.
- Unlock valuable and profitable dual-use areas often blocked by glare: around airports, along motorways, and on rooftops. In the EU alone, an additional 300 GW of PV can thus be enabled.
- The only anti-glare solution that is retrofittable to any PV installation.
- Improved surface textures can also boost the annual energy output by up to 10%.





MARKET SEGMENTS

Solar PV

Non Residential building · Residential Building

A

PVComplete · *Portugal*

Rua Alfredo Allen 455/461
4200 135 Porto
Portugal
info@pvcomplete.com
www.pvcomplete.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

EPD Renewables, Core Eng

PRODUCT

PVCAD and PVSsketch

Solar design software from concept to completion

THE NEED.

Solar developers and engineers currently create a custom design for every project site. Costly engineering is required for project design, construction plan sets and permits. This manual process makes project development lengthy and expensive.

THE SOLUTION.

The PVComplete platform is a suite of software that provides intuitive sales layout and proposal software paired with a precision CAD for solar engineering software. PVComplete offers the software to solar designing and engineering along with in-app purchases for any solar drawing or document requirements.

VALUE PROPOSITION.

- All solar project sizes.
- Intuitive.
- Portable data between sales and engineering.
- Precision engineering.





MARKET SEGMENTS

Solar PV

A

ROSI · *France*

Rue Henri Dunant 14
38180 Seyssins
France
damien.letort@rosi-solar.com
www.rosi-solar.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Strategic partners:
Soren, Evonik, Veolia, Envie

PRODUCT

Technology to recycle raw materials

Revalorising silicon from production and product waste to contribute to a circular economy in PV

THE NEED.

As an active material for PV, purified silicon (with a purity of 99.9999%) is currently obtained through a laborious process which is both energy-intensive and emits a significant amount of CO₂.

THE SOLUTION.

ROSI offers a complete and innovative solution for recycling and revalorising silicon. It does so either from "kerf", a waste product from the production of solar wafers, or from solar modules at the end of their life. What was once considered waste is reintegrated back into its original PV production value chain, activating a circular economy for the PV industry.

VALUE PROPOSITION.

- Revalorisation of raw materials for recycling companies, including silicon and silver from end-of-life modules.
- Lower production costs for PV panels and PV silicon producers.
- A treatment capacity of 3,000 tonnes of photovoltaic panels from 2023 set to reach 50,000 tonnes by 2027.





SOLAQUA

Instituto de Energía Solar UPM
Nikola Tesla, s/n
28031 Madrid
Spain

r.moreton@solaqua.com
www.solaqua.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Solar PV

A

Solaqua · *Spain*

PRODUCT Solaqua

Solar-powered irrigation system coupled in DC and without need of storage

THE NEED.

Agriculture faces high costs for access to the grid to cover water pumping in warmer months. Adapting the pumps is expensive, and while PV installations provide an alternative, the problem remains of how to use pumps with a variable power generation source, without batteries, to lower energy costs.

THE SOLUTION.

SolaQua's proprietary solution focuses on power electronics management, narrowing the gap between large PV installations and irrigation systems. An innovative business model facilitates the financing of PV powered irrigation projects by banks and investors. An advantage of the system is the creation of separate legal entities (SPVs) that connect all stakeholders and sources of finance through long-term purchasing agreements, without the need for initial investment by customers.

VALUE PROPOSITION.

- Facilitates a potential connection between large PV installations and irrigation systems.
- An innovative business model to finance PV powered irrigation projects with banks and investors.
- Creation of SPVs that connect all stakeholders.
- Financing through long-term PPAs, without initial investment from customers required.
- Local partners for PV installation and maintenance that build trust and secure long term deals.





MARKET SEGMENTS

Solar PV

Off Grid

A

Steadysun · France

Allée du Lac Saint André 18
73370 Le Bourget du Lac
France

contact@steady-sun.com
www.steady-sun.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Available on request.

PRODUCT SteadyEye

Provides advanced solar irradiance and production forecasts up to 30 minutes ahead

THE NEED.

Solar production is intermittent, unable to be dispatched, and unreliable. It is difficult to manage the electrical system and maintain a balance between generation and consumption.

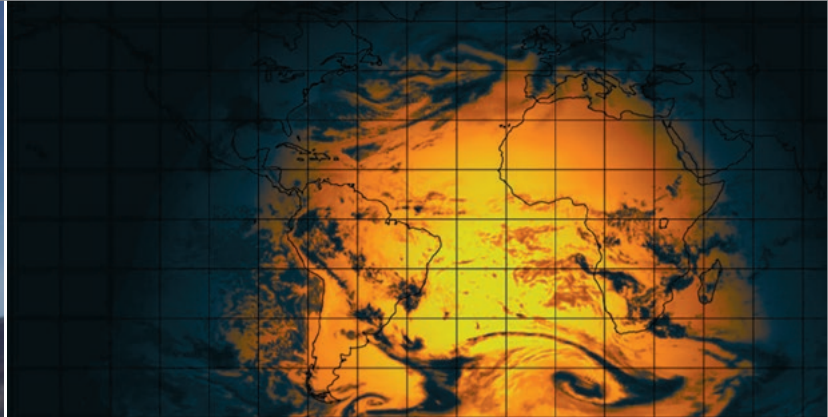
THE SOLUTION.

This unique nowcasting product combines on-site sky imagery processing with weather forecast, physical models and artificial intelligence. The product is designed to anticipate solar power ramp events and to guarantee PV production. The SteadyEye solution is tailored for industrial applications such as hybrid energy systems and storage control (i.e. PV-diesel-battery), utility scale PV and CSP plants operations as well as grid management.

VALUE PROPOSITION.

- Optimises PV power ramp management thanks to 1 minute forecast update frequency.
- Reduces hybrid plant operation costs by increasing the use of solar energy.
- Facilitates balancing of power grids and manages spinning reserves.
- Improves off-grid energy system operation by fostering balancing of the system.





MARKET SEGMENTS

Solar PV

A

Steadysun · *France*

Allée du Lac Saint André 18
73370 Le Bourget du Lac
France

contact@steady-sun.com
www.steady-sun.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

TotalEnergies
Juwi
ENGIE
EDF
REE
Gesternova
CEA
SPIE
Entech
Naldeo
EDT
Valeco
MVM
GDSolar

PRODUCT SteadyMet

Solar and wind energy forecasting API

THE NEED.

An energy trader or aggregator is required to anticipate electricity price evolution on spot power markets in order to optimise bids accordingly. To minimise portfolio balancing costs, they must also minimise the difference between their bids and actual production.

THE SOLUTION.

SteadyMet provides weather and production forecasts up to 15 days ahead. This product combines several sources of numerical weather predictions (NWP) data with physical models and artificial intelligence. By guaranteeing high solar and wind power prediction accuracy, this forecasting product helps manage uncertainties and maximise revenues. It enables the accessing of day-ahead and intraday forecasts of renewable energy production at site, portfolio, TSO/DSO zone, market area and country level.

VALUE PROPOSITION.

- Weather and production forecasts up to 15 days ahead.
- Data gathered from multiple sources.
- Manages uncertainties to maximise revenues.
- Enables access of day-ahead and intraday forecasts of renewable energy production on many scales.





Allée du Lac Saint André 18
73370 Le Bourget du Lac
France

contact@steady-sun.com
www.steady-sun.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Available on request.



MARKET SEGMENTS

Solar PV

Off Grid · Onshore Wind · Power DSO · Power TSO

A

Steadysun · France

PRODUCT SteadySat

Solar forecasts and live data based on satellite imagery

THE NEED.

A wind or solar power plant manager must deal with the increasingly stringent requirements of transmission system operators (TSO). Failing to do so may result in high penalties and/or being subject to curtailment.

THE SOLUTION.

SteadySat provides advanced solar irradiance and production forecasts up to 6 hours ahead. This product combines real-time satellite imagery with in-situ observations processing, weather forecast, physical models and artificial intelligence. Cloud properties and evolution are monitored and predicted in real-time, improving the accuracy of solar forecasts for the next few hours and anticipating the risks of variability.

VALUE PROPOSITION.

- Accurate renewable energy forecasts and monitoring of power plant performance.
- Helps reduce operating costs of assets.
- Helps minimise constraints imposed by the TSO.
- Optimises management of the storage system and/or gensets (fuel savings).
- Support offered in the development phase of a plant by conducting a large portfolio of studies.





SWEDISH
ALGAE
FACTORY



Anders Perssonsgata 12
41664 Gothenburg
Västra Götaland County
Sweden

sofie@swedishalgaeactory.com
www.swedishalgaeactory.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Solar PV

A

Swedish Algae Factory · Sweden

PRODUCT Algae-based nanomaterial

Algae-inspired efficiency enhancement for solar cells

THE NEED.

Solar panels are known to be inefficient. They only transform 15%-20 % of the light that hits them into electricity.

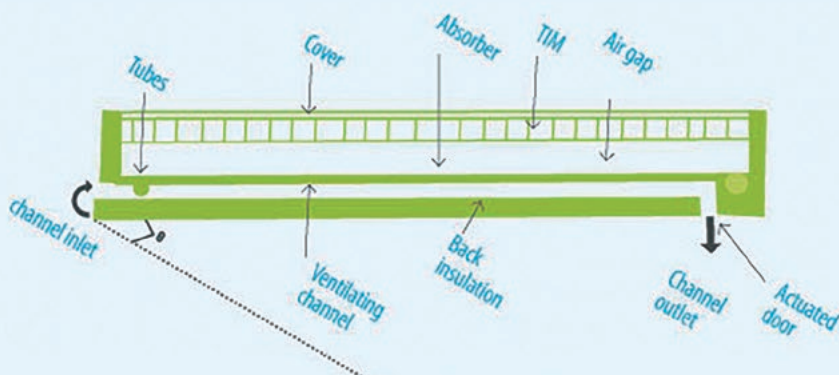
THE SOLUTION.

The nanoporous silica shell from an algae species that thrives in cold dark Nordic seas is a material naturally designed to trap light efficiently to enable the algae to survive. When incorporated into solar cells and solar panels, the light trapping ability is increased and the efficiency enhanced. The material is produced in a process where wastewater is treated and an organic biomass produced that is able to be utilised in a variety of applications beneficial for society.

VALUE PROPOSITION.

- Environmentally-friendly produced natural nanomaterial.
- Increased efficiency of solar cells.
- Lower cost of solar energy.





MARKET SEGMENTS

Solar PV

Heating & Cooling · Solar Thermal Electricity

A

Termofluids · Spain

Av. Jacquard 97, 1-E
08227 Terrassa
Spain

termofluids@termofluids.com
www.termofluids.com

✓ STARTING SALES

CUSTOMER REFERENCES

Solar collectors have been installed at the "Hospital Parc Taulí" (Sabadell, Spain) since the summer of 2016. Direct comparison towards Baxi Roca flat plate collectors. A test bank has also been installed at UPC-BarcelonaTech (Terrassa, Spain).

PRODUCT C-110

Solar thermal collector, thermal interface materials, overheating protection

THE NEED.

Heating is required for industrial processes (drying, sterilisation, etc.), and heating and cooling is needed in dwellings. The challenge is to decrease CO₂ emissions for these applications.

THE SOLUTION.

The solution is a solar thermal collector that offers an air channel, protection against overheating, a shape memory alloy (SMA) spring and thermal interface materials (TIM).

VALUE PROPOSITION.

- High performance.
- Low cost.



Cross section of thermal energy storage tank in CSP plant



Av. Jacquard 97, 1-E
08227 Terrassa
Spain
termofluids@termofluids.com
www.termofluids.com

✓ STARTING SALES

CUSTOMER REFERENCES

Contacts with engineering companies and constructors in the CSP field. Booth hired in Solar Paces (17-19/09/14, Beijing) and Menasol 2015 (13-14/05/15, Dubai). Participation in EERA-CSP (29/04/15 Brussels; 01/02/16 Freiburg; 24-25/11/16 Birmingham). Contacts in CSP Focus (29-30/06/16 Madrid) and CSP 2016 (9-10/11/16 Sevilla). Meetings with Empresarios Agrupados, DNV/GL, Sener, Abengoa. Participation of a project proposal of DNV(GL for China. Proposal of a ERA.NET project with a Turkey company (Greenway).

MARKET SEGMENTS

Solar PV

Solar Thermal Electricity

A

Termofluids · Spain

PRODUCT Codes STES and LTES

Thermal energy storage, concentrated solar power and computational tool design and optimisation

THE NEED.

Thermal energy storage (TES) systems have unsteady behaviour, turbulent flows, phase change material (PCM) in latent storage, thermo-mechanical stresses and very large geometries where experimental information is rare or simply inexistent.

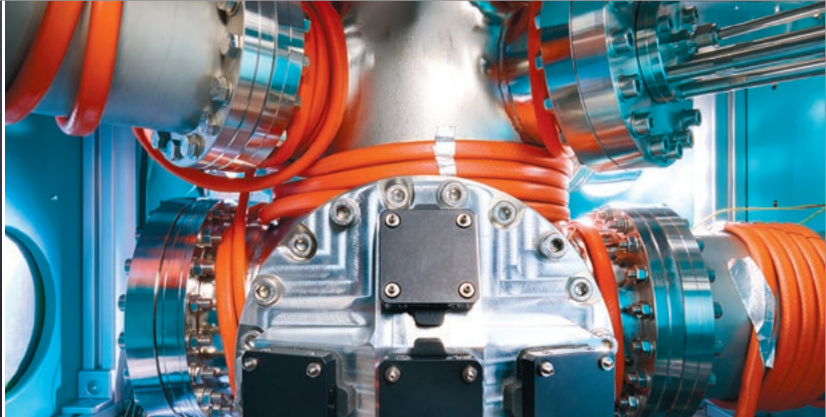
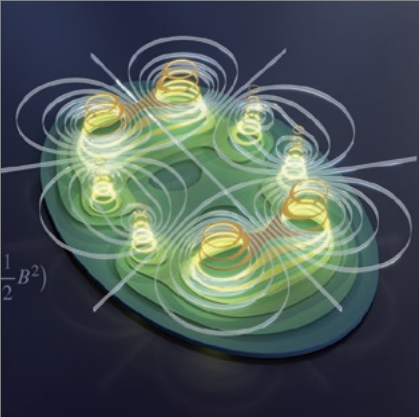
THE SOLUTION.

Termofluids offer a range of computational tools for design and optimisation. They include a multi-layered thermocline system, thermal energy storage in concentrating solar power (CSP) plants, thermocline systems and two-tank systems.

VALUE PROPOSITION.

- Levelised cost of energy (LCOE) reduction.
- Optimum designs using advanced codes.
- Personalised services.





NOVATRON

Missionsvägen 12
16733 Bromma
Sweden

peter.roos@novatronfusion.com
www.novatronfusion.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Strategic partnership with KTH Royal
Institute of Technology in Stockholm,
Sweden

MARKET SEGMENTS

Nuclear

Power DSO · Power TSO

A

Novatron · Sweden

PRODUCT Novatron

Fusion powering the sustainable planet

THE NEED.

The global demand for energy is rapidly rising, making the shift from dependence on fossil fuels or waste-generating nuclear fission power an enormous challenge. Renewable energy sources, such as wind and solar, are important but cannot yet provide the reliable energy source we need.

THE SOLUTION.

Fusion power has the capacity to provide a limitless supply of clean, reliable and affordable energy for generations to come. The NOVATRON concept – an innovative reactor solution for stable magnetic plasma confinement – has been theoretically and numerically demonstrated to minimise problems with plasma instabilities that have obstructed the commercial advancement of fusion power. The first reactor is being developed by leading physicists, engineers and academics in Stockholm, Sweden.

VALUE PROPOSITION.

- Safe – no long-term radioactive waste and accompanying disposal problems; no risk of catastrophic failure.
- Streamlining of nuclear engineering and reduction of the current capital and operational cost of future fusion reactors in process.
- No carbon emissions.
- High energy efficiency.
- Low cost.
- Reliable base power.
- Abundant fuel supply.





MARKET SEGMENTS

Bioenergy & waste to energy

Industry · Renewable gas & biofuels

A

C-Green · Sweden

Växlarevägen 31
170 63 Solna
Sweden
clement.prot@c-green.se
www.c-green.se

✓ STARTING SALES

CUSTOMER REFERENCES

Industrial-scale demonstration
OxyPower HTC™ biorefinery at the
Stora Enso packaging mill in Heinola

An OxyPower HTC™ biorefinery will be
built at a Ragn-Sells recycling center
in Sweden for municipal sludge.

C-Green also initiated a cooperation
with the leading Dutch industrial
waste management company, REYM
Rotterdam, part of Remondis, the
world's largest private waste recycling
service company, to explore the
feasibility of building an OxyPower HTC™
biorefinery at their facility in Rotterdam.

PRODUCT OxyPower HTC™

Makes wet waste valuable

THE NEED.

Wastewater treatment plants worldwide produce sludge, which is a complex stream to handle. While sludge contains valuable nutrients, it also contains bacteria, pharmaceuticals, toxins and heavy metals. Disposal costs are high and environmental targets have not been met.

THE SOLUTION.

C-Green offers a compact, robust and efficient process solution to treat and provide value for wet waste. The technology is a unique and patented combination of two chemical processes: hydrothermal carbonisation and wet oxidation, which enables the easy separation of solids and water contained in the sludge. Sludge is finally transformed into hydrochar, a dried, inert, sterile, odourless material, which could provide value as a fertiliser, as a biofuel, or as a CCS solution.

VALUE PROPOSITION.

- Turns harmful sludge into homogenous, sterile biofuel with a high energy density for power production.
- Facilitates recovery of nutrients.
- Gives municipalities or sludge owners more flexibility in how to handle sludge.
- Allows municipalities to anticipate changes in regulations.
- Offers very relevant synergies with biogas production.





MARKET SEGMENTS

Bioenergy & waste to energy

Municipality

A

Empyrio · Latvia

Brīvības iela 137B
LV-1012 Rīga
Latvia

ab@empyrio.com
www.empyrio.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request

PRODUCT

Compact system for wastewater sludge utilisation

Cost-effective, compact on-site sewage sludge utilisation solution for small and medium wastewater treatment plants

THE NEED.

The key sludge utilisation methods are either cheap and harmful or too expensive for small and medium-sized wastewater treatment plants. Such municipalities need to seek solutions that enable them to achieve greater independence from external factors while complying with regulatory requirements and remaining cost-effective in the long-term perspective.

THE SOLUTION.

Empyrio offers a solution for cities of 20,000 to 200,000 inhabitants: cost-effective, compact on-site sewage sludge utilisation system for small and medium-size wastewater treatment plants. Additionally, ash from such sludge utilisation process may be used for the recovery of phosphorus.

VALUE PROPOSITION.

- Significantly lower costs compared to traditional utilisation methods (€150-220/t of dry solids).
- Small volume utilisation (500+ t of dry solids/year).
- Short payback period.
- Autonomous operation with no need for additional energy resources or raw materials.
- Automated process with no additional personnel required.
- Adapted even for 80% water content (high-moisture) sewage sludge utilisation.
- Compact 20 and 40-foot containers allocation.
- Advanced flue gas treatment system.
- Integration into existing treatment process.





MARKET SEGMENTS

Bioenergy & waste to energy

District Heating Grid · Municipality

A

Ingelia · *Spain*

Jaime Roig 19
46010 Valencia
Spain
marisa.hernandez@ingelia.com
www.ingelia.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

PRODUCT Product Name

Hydrothermal Carbonization Industrial Plant

THE NEED.

Organic waste is usually composted or digested, these processes imply high operating expenses (opex) and the compost produced does not comply with EU specifications in most cases. There is a need of new processes to deal with organic waste products.

THE SOLUTION.

Ingelia's hydrothermal carbonisation (HTC) plants are able to treat organic waste and turn it into hydrochar, reducing opex and greenhouse gas emissions. Organic waste is transformed into hydrochar for further applications in the bioeconomy. Ingelia provides HTC technology (engineering and equipment) to waste managers, municipalities and food and drink industries.

VALUE PROPOSITION.

- Advanced, developed technology to valorise organic waste.
- Automatised process, easy operation, odour free and low operating costs.
- Flexibility to operate and maintain plants.
- Reduction of waste transport.





MARKET SEGMENTS

Bioenergy & waste to energy

A

Methaplanet · *The Netherlands*

Bordewijklaan 38
2591 XR The Hague
The Netherlands

xs@methaplanet.com
www.methaplanet.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

PRODUCT

Methaplanet's Maximizer

Prepare your biomass and increase your biogas production

THE NEED.

The world needs cleaner sources of energy. One way to achieve this is to help existing biogas plants boost their biogas production. This can be achieved through optimal preparation of input streams.

THE SOLUTION.

Methaplanet does not build more biogas plants. Instead, it optimises existing plants by supplying a patented energy pellet production unit – the Maximizer. By adding a Maximizer to installations, biogas plants can start producing their own high-yield energy pellets immediately. This generates much more biogas per ton input materials, and optimises the production of biogas.

VALUE PROPOSITION.

- Produces own energy pellets for higher performance of existing biogas plants.
- Much more revenue per ton input.
- Fast ROI: about 3 years on average.
- Biogas production maximised.
- Helps to make business operations circular.
- Contributes to a cleaner world.





MARKET SEGMENTS

Bioenergy & waste to energy

Heating & Cooling · Industry · Municipality

A

Meva Energy · Sweden

Backa Bergögata 18
422 46 Hisingsbacka
Sweden

niclas.davidsson@mevaenergy.com
www.mevaenergy.com

✓ STARTING SALES

CUSTOMER REFERENCES

Demo plant, industrial scale
(1,2MWe, 2,4MWth) erected for Pite
Energi (Sweden).

CHP unit with 2,4MWe and 4,8MWth
to be erected for furniture producer
IKEA Industry (Poland) where waste
MDF dust will be used as feedstock.
Commissioning end 2025

Renewable gas unit of 4,2MWgas to
be erected for tissue producer Sofidel
(Sweden) replacing fossil LPG for
tissue drying. Commissioned in 2023.

PRODUCT Meva Energy

Making it possible to reach below net-zero

THE NEED.

When addressing the need for industrial-sized cogeneration or combined heat and power (CHP) from solid biomass, today's paradigm is either to build large scale power plants (larger than 10 MWe) using steam turbine CHP technology, or to burn the feedstock in a boiler, which only produces heat.

THE SOLUTION.

Meva Energy's solution is to enable power and heat production in the range below the commercial feasibility of steam turbine technology. The plant is based on biomass gasification and, in particular, on the utilisation of fine fraction feedstock. The technology is suitable for industrial application, and can utilise feedstock residue from wood-based manufacturing or agriculture to create a local, circular energy system with minimised transportation and distribution losses.

VALUE PROPOSITION.

- Acceptance of fine fraction, low cost feedstock.
- Highly controllable power source able to balance power grids due to intermittency of solar and heat.
- Production of even gas quality with high energetic content, suitable for a high efficiency lean-burn gas engine.
- Low cost, high efficiency production of renewable, decentralised power and heat.
- Relatively non-complex system layout, low pressure and temperature.





Drottning Kristinas väg 18
11428 Stockholm
Sweden
info@phoenixbiopower.com
www.phoenixbiopower.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

We are in pre-commercial phase with no plants in operation at this stage. Discussions with potential plant end-users/buyers ongoing.



MARKET SEGMENTS

Bioenergy & waste to energy

District Heating Grid, Industry

A

Phoenix BioPower · Sweden

PRODUCT BTC- Biomass Fired TopCycle

Doubling the efficiency of power production from biomass

THE NEED.

The rapid shift towards renewable energy has led to massive investments in intermittent renewables while base load fossil and nuclear are being phased out. This has led to an increased demand for dispatchable renewable power: renewable whenever and wherever you need it.

THE SOLUTION.

BTC offers new cutting-edge technology that can produce twice the power from biomass than traditional technologies. The BTC plant and its core gas turbine system is capable of 100% H₂ operation with ultra-low NO_x emissions for zero emissions power. With waste heat available, bio-energy with carbon capture and storage (BECCS) is possible at twice the electrical net efficiency compared to steam cycle plants.

VALUE PROPOSITION.

- On-demand renewable power at utility scale.
- Plant cost from 1.5 to 5.5M€/MWh electricity (10 and 100 MWe scale respectively).
- High efficiency renewable biopower.
- In targeting residue waste streams from forest and agriculture sectors, the technology is part of the circular energy system.
- Superior BECCS capability.
- 100% H₂ combustion capacity.
- Power efficiency of 40-55%.
- Total efficiency of 80-100% (LHV).

Marginal cost <50€/MWh without subsidies.

Positive NPV without subsidies.





Avenue du Lac Léman 17
73370 Le Bourget du Lac
France

g.deroffignac@ataway.com
www.ataway.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

28 hydrogen refuelling stations
commissioned.

Customers: HYmpulsion
(2 hydrogen refueling stations in
operation, 3 in production).

Morbihan Energies (1 hydrogen
refueling stations in operation).



MARKET SEGMENTS

Hydrogen & e-fuels

Municipality · Residential Building · Transport & mobility

A

Ataway · France

PRODUCT Hydrogen Refuelling Stations

Hydrogen refuelling stations serving all types of vehicles, whenever and wherever required

THE NEED.

For local authorities and companies across Europe, the development of refuelling technologies is crucial to decarbonise mobility. This development requires easy access to hydrogen which must be made available anywhere and at anytime.

THE SOLUTION.

Since 2015, Ataway has designed, manufactured and distributed hydrogen refuelling stations across Europe, contributing to the deployment of carbon-free hydrogen. Hydrogen refuelling stations are suitable for refuelling all types of vehicles, whenever and wherever required. Compact, scalable and mobile, these stations support the growing regional use of hydrogen and offer customised solutions adapted to each project – from the pilot project to the complete network.

VALUE PROPOSITION.

- Decentralised and autonomous solution.
- Legislation and administrative support.
- Partnership with major industrial companies for system operation.
- Turnkey solution.
- Low maintenance.
- CE certified.





→ H2



MARKET SEGMENTS

Hydrogen & e-fuels

Bioenergy & waste to energy · Industry

A

Athena · France

Rue Henri Perret 3
49170 Saint Georges sur Loire
France

contact@athena-recherche.fr
www.athena-recherche.fr

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request

PRODUCT Hydrogen New Version

Hydrogen derived from a waste-to-power solution

THE NEED.

Sewage water must be cleaned in order to protect rivers and oceans. However, both chemicals and energy are required to do so. Organic materials contained in sewage water provide a source of energy for microorganisms, and a source of inspiration.

THE SOLUTION.

An innovative solution aimed at sewage water producers, especially those in the food and drinks industry, transforms waste into hydrogen. It does so via a dedicated bacterium that is capable of growing in sewage water and quickly producing high-quality hydrogen, cleaning the water. No longer a waste product, sewage water can be a source of local, clean, renewable and carbon-free energy.

VALUE PROPOSITION.

- A solution capable of creating local hydrogen ecosystems based on a circular economy.
- Lower natural gas consumption for processing and transportation of raw materials (milk, cereals, etc).
- At least 60% reduction of energy required to clean sewage water.
- At least 1,5 litres of hydrogen produced per litre of sewage water.
- Hydrogen produced at a competitive price compared to fossil fuel energy (less than 5€/kg).
- Provides a green image and brand for companies.





Gruvgatan 35
421 30 Västra Frölunda
Sweden
philip.gillgard@celcibus.com
www.celcibus.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request



MARKET SEGMENTS

Hydrogen & e-fuels

Industry · Non Residential building · Residential Building

A

Celcibus · Sweden

PRODUCT

Non-PGM catalyst and MEA for PEM fuel cells

A durable nobel metal-free catalyst for next generation fuel cells

THE NEED.

Current proton-exchange membrane (PEM) fuel cells rely on noble metals like platinum for their performance. Pt is a critical raw material making up over 50% of the fuel cell stack cost, but is limited in supply and with a volatile cost. Supply is concentrated in South Africa, Zimbabwe and Russia.

THE SOLUTION.

The Celcibus catalyst can lower the cost for the fuel cell stack by up to 30% with a more sustainable footprint. It is based on transition metals, much cheaper than noble metals, in the active sites. While traditional fuel cells require the recovery of noble metals, a process creating poisonous by-products, fuel cells using the Celcibus catalyst can be handled in the regular metal recycling process.

VALUE PROPOSITION.

- Elimination of the dependence on critical raw materials.
- Up to 30% lower fuel cell stack cost.
- More sustainable life cycle process.
- Control over supply chain (no conflict minerals issues).





MARKET SEGMENTS

Hydrogen & e-fuels

A

FertigHy · Spain

Paseo de la Castellana 259D, piso 18
28046 Madrid
Spain

ja.delasheras@fertighy.com
www.fertighy.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Strategic partnerships:
Heineken, Invivo

PRODUCT FertigHy

Low-carbon fertiliser production to accelerate the decarbonisation of the food value chain

THE NEED.

There is an urgent need to decarbonise the agriculture sector, responsible for 10% of total GHG. However, this must be done in a way that ensures resilience against disrupted fertiliser supply chains while upholding sovereignty and security of supply for the agriculture industry.

THE SOLUTION.

FertigHy plans to build and operate several large-scale low-carbon fertiliser projects in the EU. The first plant is set to start construction in 2027 in France. The plants will produce 500.000 tonnes per year of low-carbon fertilisers, with the objective of reducing emissions by up to one million tonnes of CO₂ per plant per year.

VALUE PROPOSITION.

- Affordable low-carbon fertiliser produced with low-carbon electricity.
- Made in Europe using low-carbon hydrogen; no dependency on natural gas or imports.
- Strong consortium of shareholders cover the complete value chain: EIT InnoEnergy, RIC Energy, Siemens Financial Services, MAIRE, InVivo and Heineken.
- Supported by the European Green Hydrogen Acceleration Center (EGHAC).





Avenue Louis Philibert Technopole
de l'environnement de l'Arbois
Bâtiment Lavoisier
13100 Aix en Provence
France

bmoreno@hysilabs.com
www.hsl.tech

✓ PILOT

CUSTOMER REFERENCES

Partnerships and projects:
Port of Anvers-Bruges, Rotterdam,
Toyota Start-Up Accelerator, PRIO
Jump Start, Sun-to-X, etc



MARKET SEGMENTS

Hydrogen & e-fuels

Off Grid · Transport & mobility

A

HSL Technologies · France

PRODUCT Hydrosil

The first liquid inorganic hydrogen carrier that makes hydrogen easy to deliver

THE NEED.

Hydrogen is a clean alternative to fossil fuels. However, it is difficult to transport and store. It requires either very high pressure, or very low temperatures, and is also limited by strict regulations. A new way of transporting and storing the promising energy carrier needs to be deployed.

THE SOLUTION.

Hydrosyl is the first liquid inorganic hydrogen carrier that can transport and store the molecule at ambient temperature and pressure, via the existing infrastructures and for long periods of time. In addition, there's energy input needed at the moment of unloading the hydrogen from the carrier, so the energy can be transported from wherever it's available. This carrier is environmentally-friendly, as Hydrosil is silicon-based, amounting to the first completely zero-carbon value chain.

VALUE PROPOSITION.

- Liquid hydrogen carrier, stable at ambient temperature and pressure.
- Non-organic (silicon-based).
- High hydrogen density (8.7% by weight).
- Possible to transport and store it in the existing infrastructures (similar to gasoil on handling).
- Recommended for: massive amounts of hydrogen, long-distance transport.
- Release process with no energy input required.



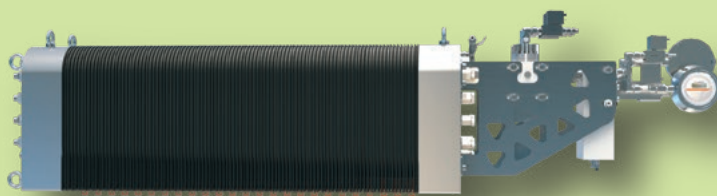


Flintrännegatan 19 B
21424 Malmö
Sweden
mb@hymeth.com
www.hymeth.com

✓ PILOT

CUSTOMER REFERENCES

Available on request



MARKET SEGMENTS

Hydrogen & e-fuels

Off Grid · Power TSO · Residential Building

A

Hymeth · Sweden

PRODUCT Hyaeon

The most cost-efficient method for producing green hydrogen

THE NEED.

Green hydrogen production is currently an extremely expensive process. Electrolysers require a costly platinum or iridium-based catalyst, are energy inefficient, large in size and can only compress hydrogen gas at low pressures (up to 35 bar).

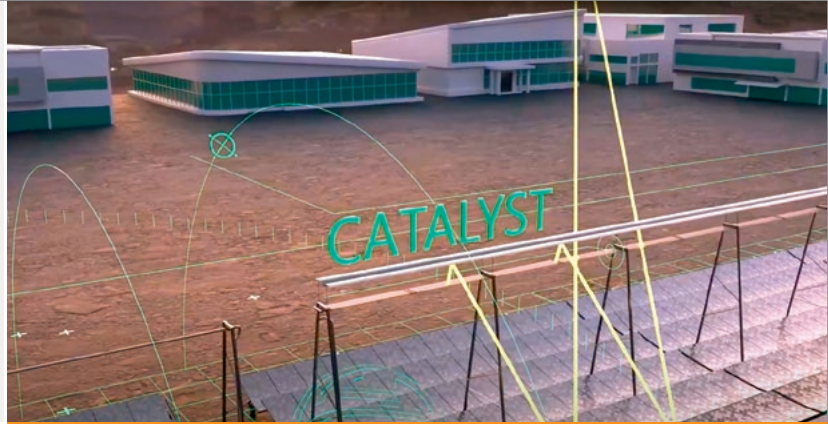
THE SOLUTION.

Hymeth introduces the most cost-effective alkaline electrolyser to produce green hydrogen. It includes radical innovations: a new non-precious alloy electrocatalyst, capabilities of delivering highly compressed gas, and has a lightweight and compact design that reduces the space required to store it. The electrolyser is expected to produce hydrogen at a cost reduction of up to 26% compared to existing alkaline electrolysers.

VALUE PROPOSITION.

- Expected to produce hydrogen at a cost reduction of 20%-26% compared to existing electrolyser technologies.
- A state-of-the-art system for FC vehicle refilling stations, sustainable steel production, bio oil refinery, energy storage, etc.
- Lower capital expenses (capex) and operating expenses (opex).
- Highly efficient.
- Built for high pressure electrolysis (350 bar).





MARKET SEGMENTS

Hydrogen & e-fuels

A

Hysun · *Spain*

Rua da Xesta, Parque Industrial
Novo Milladoiro 78-A2
15864 Ames, A Coruña
Spain

m.monterrey@h2hysun.com
www.h2hysun.com

✓ **PILOT**

CUSTOMER REFERENCES

Available on request

PRODUCT Hysun

100% clean and low-cost hydrogen obtained by a photo-thermo catalytic process fully off-grid

THE NEED.

There is an urgent demand for 100% clean hydrogen, mitigating greenhouse gas emissions and battling climate change. The solution must have the goal of zero carbon emissions and no critical materials used, and outperform traditional methods while remaining cost-competitive.

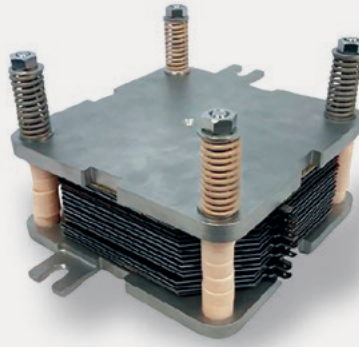
THE SOLUTION.

The Hysun hydrogen solution is obtained from a disruptive process using a photo-thermo catalytic process that combines a unique patent protected catalyst with proprietary Solar Concentration Technology. STH (solar to hydrogen) efficiencies of 21% / 42% are achieved, significantly more than the usual 11% for photovoltaic-powered electrolyzers.

VALUE PROPOSITION.

- 100% clean hydrogen at highly competitive prices (1-3 €/kg).
- A carbon footprint up to 4 times smaller than equivalent PV-electrolyser plants, at half the OPEX and CAPEX.
- Much lower water consumption.
- Perfectly adaptable to isolated environments (off-grid).
- The process utilises only non-critical materials, avoiding both scarcity and geopolitical challenges.





MARKET SEGMENTS

Hydrogen & e-fuels

Bioenergy & waste to energy

A

Kerionics · Spain

Ferrers 9
46900 Valencia
Spain
fcolon@kerionics.com
www.kerionics.com

✓ EARLY STAGE

CUSTOMER REFERENCES

Ciudad de la Energía–CIUDEN
Coxabengoa
CIAE – Centro Ibérico de Investigación
en Almacenamiento Energético
AIRBUS
Técnicas Reunidas
Repsol

PRODUCT Kerionics

Highly efficient and cost effective electrolyzers

THE NEED.

The EU targets an ambitious production rate of 100 GW of green hydrogen by 2030, with 40% produced by European-made electrolyzers.

THE SOLUTION.

High-temperature electrolysis (SOEL) is a technology based on 20 years research and development into solid oxide cells. It offers both high efficiency values (95%): 28-40 kWh/kgH₂ and a large amount of H₂ generated per kWh. The incorporation of SOEL technology in the industry enables waste heat to be used to generate H₂ with an efficiency level of near 95%, thereby diminishing the cost of H₂ (€/kg H₂) through decreased electricity consumption (OPEX) and plant expenses (CAPEX).

VALUE PROPOSITION.

- CAPEX reduction for clients due to reduction of stack manufacturing costs through mass production technologies.
- Reduction in parts required for assembly and lower MEA costs.
- Proprietary electrode improves the OPEX and CAPEX of the stack by reducing electrical resistance and lowering operational temperatures.
- Low-cost and reduced energy consumption.
- Safe, reliable and convenient.





MARKET SEGMENTS

Hydrogen & e-fuels

A

Phynix · Spain

Vía de los Poblados 1, edificio E, 3ª
28033 Madrid
Spain

comunicacion@phynix-energy.eu
www.phynix-energy.eu

✓ **EARLY STAGE**

CUSTOMER REFERENCES

There are two commercial green hydrogen projects currently ongoing: the Vitale plant with an electrolyser capacity of 10MW, and the Barataria plant with an electrolyser capacity of 70 MW. The current pipeline has up to 10 projects in key strategic locations each of them with 100 MW electrolyser capacity.

PRODUCT

Green Hydrogen Production

Decarbonise your company with green hydrogen

THE NEED.

A wide range of industries, including mobility and transportation, logistics, cement, pharmaceutical, chemical, automotive and steel all need to decarbonise production while remaining competitive.

THE SOLUTION.

As one of the first independent producers of green H2 in Europe and a project developer, pHYnix can supply all the above industries simply and competitively. The company has a vertically integrated business model that covers everything from the design, construction and operation of hydrogen plants to their maintenance. Customers are supplied through a long-term contract known as a hydrogen purchase agreement (HPA). Plants are set to have an electrolysis capacity of more than 1 GW by 2030.

VALUE PROPOSITION.

- Independent of energy oligopolies.
- Develops green hydrogen projects and its derivatives (e-fuels, e-methane, etc.) from concept to construction, operation and maintenance.
- Accelerates the rapid migration of industry and transport to renewable hydrogen and its derivatives through design, operation and financing.





MARKET SEGMENTS

Renewable gas & biofuels

A

Camelina Solutions · Spain

Cam. de la Carrera 11
28140 Fuente el Saz de Jarama
Madrid
Spain

yhy@camelinasolutions.com
www.camelinasolutions.com

✓ STARTING SALES

CUSTOMER REFERENCES

Samples provided to several reference companies in Europe, including: Semences de France and Limagrain in France, DSV in Germany, Saatbau Linz in Austria

PRODUCT

Camelina planting seed

Sustainable ILUC feedstock grown in fallow land in Europe

THE NEED.

Feedstock for biofuel production needs to comply with strict environmental requirements and economic and social concerns.

THE SOLUTION.

Camelina crop is a oil crop feedstock that can be cultivated in marginal or fallow land in arid dry land regions. It achieves greenhouse gas emission reductions of over 60%, does not compete on land with food production and has already been employed by the biofuel (road transportation) and bio-jet fuel (aeroplane) industry. It implies no land use change (LUC) and has a low indirect land use change (ILUC) impact. It is cost competitive with feedstock employed for biofuel production.

VALUE PROPOSITION.

- Can be cultivated in marginal or fallow land in arid dry land regions.
- Full service, with combined sales of the seeds and guaranteed off-take agreement, reducing risk for farmers.





MARKET SEGMENTS

Renewable gas & biofuels

Bioenergy & waste to energy · Hydrogen & e-fuel

A

Enosis · France

12 rue Louis Courtois de Viçose
Portes Sud, Bat. 3
31100 Toulouse
France

vincent.guerre@enosir-energies.com
www.enosir-energies.com

✓ STARTING SALES

CUSTOMER REFERENCES

Sergies
Calcia Ciments
Engie
Seche Environnement
GRDF / GRTgaz
John Cockerill

PRODUCT

Enobio (biomethanation reactor)

CO₂/biogas/syngas conversion solutions to produce renewable and low-carbon gas

THE NEED.

To eliminate fossil fuels, renewable gases need to be upgraded in order to be injected into the gas grid. Biomethanation makes it possible to increase methane content by converting CO₂, CO and H₂ into methane, without requiring extra methanisable material and by achieving grid specifications.

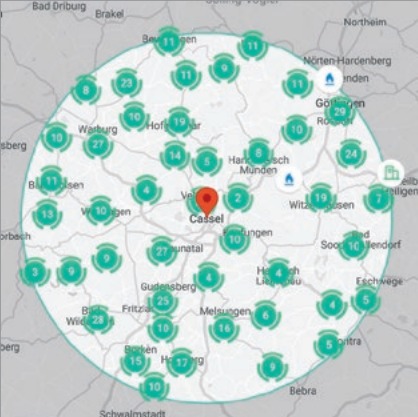
THE SOLUTION.

Based on an innovative, sustainable biotechnology, Enosis designs and develops biomethanation units including associated control command. The company's know-how covers the design, manufacturing and integration of biological methanation units within host sites (methanisation sites, pyrolysis or gasification sites, and industrial sites), their connection to the grid and their operation and maintenance. ENOSIS also advances the development of territorial methanation projects and their financing.

VALUE PROPOSITION.

- Increases production of renewable gas (by 55% to 100%), while preserving natural landscapes and agricultural areas.
- Recycles CO₂ and reduces CO₂ emissions (avoids fossil fuels such as natural gas).
- Stores renewable electricity surplus.
- Low capital expenditure (CAPEX).
- Low operating expenditure (OPEX).





iNex

MARKET SEGMENTS

Renewable gas & biofuels

Bioenergy & waste to energy · Solar PV

A

iNex · France

rue La Condamine 45
5017 Paris, Ile de France
France
gambari@inex.pro
<https://sourcing.inex-circular.com>

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

TotalEnergies, Engie, Colas, Lafarge, Veolia, Arcelor Mittal, Holcim, Refashion, Naturgy, Antargaz, Sabic, Knauf...

ENGIE : Detection of 300kt of co-substrates for several anaerobic digestion units in France

TotalEnergies : Analysis of biogas potential and investment advice in Europe

Knauf: Macro Analysis of the biogas potential around their plants and micro analysis in the selected plant to secure the feedstock and obtaining a subject to permitting so they can become their own energy providers.

PRODUCT iNex Sourcing

For all companies looking for industrial and agricultural waste deposits

THE NEED.

To confront the climate crisis, some actors are investing in recycling and in the production of green energy. To do so, they need to locate recyclable waste as well as usable land and roofs for renewable power plants and generation.

THE SOLUTION.

iNex is a decision-making tool designed to support energy, recycling and industries aiming to implement waste valorisation solutions (biogas, plastics, etc.). Using AI and extensive data, iNex Sourcing predicts the type of waste in a selected area, identifying producers and key partners to secure a biogas/recycling unit investment; iNex Foncier identifies available land for RNE/recycling units (regulatory constraints, etc.); while iNex Consulting provides expertise on waste potential.

VALUE PROPOSITION.

- Time-saving: 3 clicks replace a study that lasts several months, the end of ratio calculations by hand in Excel, no more intermediary (firms, traders...).
- Economical: 30% time saving to make a sale, 80% reduction of targeting errors, 75% faster acquisition of deposits.
- Secures investments: accurate and up-to-date data in real-time, comprehensive business analysis, data verified by a data team.
- Customer benefits: instant access to data, increase in prospects and contracts, ROI within 3 months.





Nesetten

Ringstraße 4
18059 Papendorf
Mecklenburg-Western Pomerania,
Germany

info@nesetten.com
www.nesetten.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Ongoing LOI and MOU for collaborations with Eurotec Engineering Corporation Pvt. Ltd. (India), Crowley LNG, Inc (USA), Timex S.A. (Poland), Polaris Marine and Offshore Support Services Limited (Nigeria), Rural Electrification Agency (Nigeria), and Viessmann (Germany). These agreements form the basis for our joint "go-to-market" strategy and collaborative projects aimed at testing and validating our products and solutions.



MARKET SEGMENTS

Renewable gas & biofuels

Bioenergy & waste to energy · Energy Storage Solutions

A

Nesetten · *Germany*

PRODUCT Nesetten Cryo-bulk

Nano-scale cryogenic bulk: a game-changer for (bio-) LNG

THE NEED.

There is a need for suitable technology to unlock the untapped potential of the nano-scale (bio-) LNG market. This hinders its ability to offer an eco-friendly, cost-effective alternative that ensures energy access in off-grid areas, for example, and can also lead to reduced economic growth.

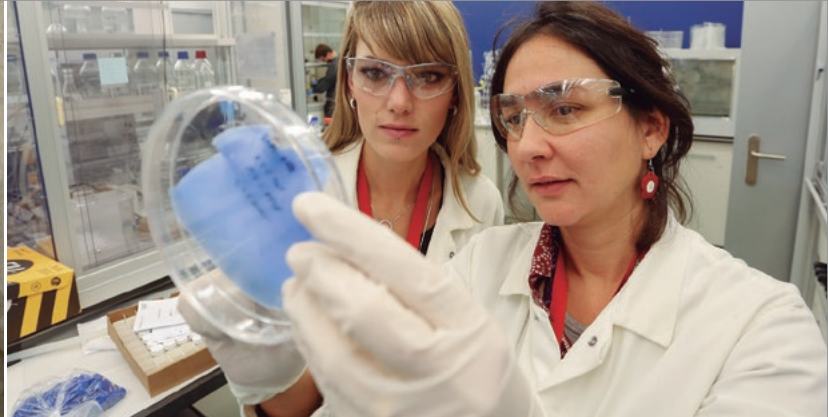
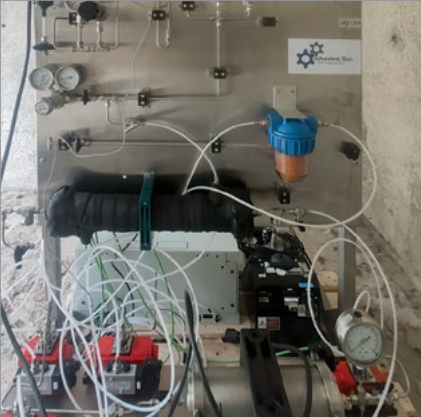
THE SOLUTION.

Nesetten's products are dedicated to unlocking solutions for the use of bio-LNG and LNG on a micro- and nano-scale that offer eco-friendly alternatives for decentralised energy supply systems. Nesetten's primary focus is the cutting-edge manufacturing of 2nd-generation cryogenic micro bulks, capable of storing liquids at temperatures as low as -196 °C. Its revolutionary construction allows the company to pioneer steel- and vacuum-less bulks, enhancing safety and design flexibility.

VALUE PROPOSITION.

- Redefines the energy paradigm with groundbreaking nano-scale technology.
- Focused on LNG and bio-LNG, this innovative system empowers energy access in off-grid regions and emergencies.
- Users effortlessly meet lower energy demands through flexible storage and distribution solutions.
- Promotes sustainability and long-term growth with green-ready technology adaptable to various cryogenic liquid fuels.
- Ensures energy independence and fosters economic growth.





Avenida Països Catalans 16
43007 Tarragona
Spain

edaura@orchestrasci.com
www.orchestrasci.es

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Renewable gas & biofuels

Gas DSO · Gas TSO · Hydrogen & e-fuels · Industry

A

Orchestra Scientific · Spain

PRODUCT

Adsorption Technology for CO₂ Capture

Green and affordable solutions for CO₂ capture, and more

THE NEED.

More CO₂ is produced than any other greenhouse gas, but there is still no affordable technology to prevent its emission.

THE SOLUTION.

This innovative system provides selective CO₂ separation with a range of advantages: outstanding CO₂ uptake and selectivity with respect to other gases, including CH₄, N₂, O₂, H₂, CO and in dynamic breakthrough conditions; complete retainment of dynamic CO₂ uptake capacity in the presence of a gas mixture with a different composition; the ability to work in a wide CO₂ concentration range (1% - 99%); the ability to work in mild conditions, ambient pressure and wide temperature range (RT - 80°C).

VALUE PROPOSITION.

- High yield (up to 99%) recovery of other gases with a high degree of purity (≥ 99.5 %).
- Advanced working capacity (up to 99%): easy and quick regeneration with vacuum and or gas flow (Air, N₂, CH₄ etc).
- Possibility of high purity CO₂ recovery (≥ 99.5 %).
- High stability: 7 months working so far with no sign of degradation.



District heating grid

ConnectPoint	086
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Off Grid

MPower	087
RVE.SOL	088
Solaris Offgrid	089
Wattsun	090

Power DSO

Bamboo Energy	091
Eneida	092
Energiot	093
Hepta Insights	094
OmegaLambdaTec	095
Ringhel	096
TokWise	097

Power TSO

Online	098
Spottitt	099

The background is a dark, abstract composition of glowing blue and red lines that resemble circuit traces or data paths. These lines are layered and intersect, creating a sense of depth and complexity. A large, bold, green letter 'B' is positioned in the upper right quadrant, partially overlapping the circuit lines.

B

Grid and
infrastructure



Zagadki 21
02-227 Warsaw
Poland

agnieszka.szleminska@connectpoint.pl
www.connectpoint.pl

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

ConnectPoint delivers solutions to leaders in utilities, power and manufacturing industries such as E.On, RWE, PGE, Twinings, Veolia, Stadtwerke Leipzig.

MARKET SEGMENTS

District Heating Grid

Hydropower · Municipality · Power DSO · Power TSO

B

ConnectPoint · Poland

PRODUCT NEXO

Meter data quality assurance as a service for utilities and energy

THE NEED.

The energy and utilities industry needs a prime quality of meter data for its operations, especially for billing purposes.

THE SOLUTION.

Smartvee is a platform for meter data validation (VEE) and analysis that solves the issues of data quality assurance for billing purposes, anomalies detection and consumption forecasting. Smartvee takes an innovative approach to VEE process and meter data insights - data quality assurance as a service. Smartvee combines hands-on industry expertise and exceptional user experience with timeline-based data processing management.

VALUE PROPOSITION.

- Flexible and efficient data framework.
- Higher accuracy of demand and consumption forecasting.
- Higher efficiency of accounting processes (meter-to-bill).
- Lower number of frauds and losses.





MARKET SEGMENTS

Off Grid

Solar PV

B

MPower · *Switzerland*

Hohlstrasse 176
8004 Zurich
Switzerland
info@mpower.africa
www.mpower.africa

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

MPower approaches 3 different type of partners: 1) distribution partner (e.g. Climate Management Ltd. in Zambia or S2 Services in Cameroon) 2) financing partners (e.g. Madison Insurance in Zambia, Crowd4Climate) 3) corporate partnership (e.g. Barry-Callebaut).

PRODUCT MPowering the Future

A B2B2C platform supplying and financing small-scale solar infrastructure in emerging markets

THE NEED.

Currently, 1 billion people live without access to electricity, and millions more suffer from unreliable grid connections that fail for hours each day. They then use expensive, dangerous and unreliable fossil fuel-based products. The majority are considered unbanked and without any credit history.

THE SOLUTION.

MPower is a fintech and impact start-up confronting the challenges of energy access and financial inclusion in emerging markets. Through a highly scalable B2B2C partnership model, it enters into agreements with local resellers with existing distribution networks by providing them with (1) plug & play, affordable solar bundles, (2) access to financing solutions, and (3) smart software and a data platform. It digitises operations and collects data on end-users, building them credit profiles.

VALUE PROPOSITION.

- Hardware offers mobile, high-quality clean energy products.
- Financing solutions give access to capital, reducing working capital needs for partners and offering affordable monthly payments for end-users.
- An in-house developed software platform digitises partners' operations and tracks products and payments. It collects data on end-users, enabling the development of credit profiles and rating schemes, which gives a credit history to unbanked end-users and mitigates risks.





MARKET SEGMENTS

Off Grid

Power DSO · Solar PV

B

RVE.SOL · Portugal

Rua da Granja N.10A
2420-397 Boa Vista Leiria
Portugal

info@rvesol.com
www.rvesol.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Available on request

PRODUCT KUDURA

The power to change

THE NEED.

Many people in remote areas have no access to electricity and safe drinking water.

THE SOLUTION.

KUDURA is a green micro- or mini-grid-based solution (GMG – Green Mini-Grid) to sustainable rural development. It offers rural communities high-quality, sustainable and renewable energy and drinking water on an affordable pay-as-you-go (PAYG) basis. KUDURA is an integrated, containerised solution that is safe, reliable, weatherproof, designed and built to last 20+ years.

VALUE PROPOSITION.

- Electricity for productivity, communications and entertainment.
- Hybrid generation and distribution from any source: Solar, Biomass & diesel as backup.
- Clean, potable drinking water for health and wellbeing.
- Local water sources are purified through UV, ultra-filtration or desalinisation.





MARKET SEGMENTS

Off Grid

Solar PV

B

Solaris Offgrid · Spain

The Nest, Paseo de las facultades 3
46021 Valencia
Spain

claudio@solarisoffgrid.com
www.solarisoffgrid.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Name of customer: One Acre Fund
Date of Sale: November 2020
Country of Sale: Kenya
Object of the Sale: PaygOps Software Services

Benefit: Improve leasing and loan management operations
Name of customer: Access to Energy gGmbH (A2EI)
Date of Sale: July 2022
Country of Sale: Nigeria
Object of the Sale: PaygOps Software Services and product integration Services

Benefit: Improve leasing and loan management operations and connectivity of their devices
Strategic Partnerships: GOGLA, EnAccess, SPARK, Victron Energy, Biolite...

PRODUCT Solaris Offgrid

Delivering life-changing technology to the Next Billion through IT solutions and essential design and engineering

THE NEED.

Life-changing technology must be made affordable for people in developing countries. Solaris Offgrid is extending the model to a wide range of essential products and services in need through innovative technology and solutions.

THE SOLUTION.

Through software solutions (PaygOps) and product design services (SolarisLab), Solar Offgrid provides Paygo distributors with cloud IT infrastructure to connect energy and utility appliances (solar, water-pumps, stoves); payment methods (mobile money); and enterprise applications / application programming interface (API) services for the smooth management of Paygo lease and field operations. Product manufacturers are also supported in developing products that best meet market needs.

VALUE PROPOSITION.

- **Interoperability:** the development of open source technologies and the ability to adapt to distribution processes or ecosystems of products and apps. PaygOps facilitates the adoption of Paygo products and profitability for last-mile distributors.
- **Flexibility:** supporting the ecosystem of partners with customisable solutions and design processes aligned with the specifics of different business models.
- **Bottom-up design:** PaygOps software was created as a result of first-hand-experience with last-mile distribution of solar home system kits in Tanzania and Eastern Africa.





Westervoortsedijk 73
6827 AV Arnhem
The Netherlands

bart@wattsun.net
www.wattsun.net

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Events: ColdPlay World Tour 2022-23
Rental: Boels Rental
Construction: TBI, Van Gelder, Dura
Vermeer, Van Vulpen
Events: The Power Shop, Event
Engineers, PlayGround
Media / Broadcasting: NOS,
LocatieWerk
PuroCuento Filmmaking Supplies



MARKET SEGMENTS

Off Grid
Industry

B

Wattsun · The Netherlands

PRODUCT Wattsun Pop-Up Power

Wattsun provides green pop-up power for off-grid situations

THE NEED.

In off-grid situations it is common to use fuel generators as a power supply. These generators typically have low energy efficiency, emit excessive amounts of CO₂, smell and are noisy.

THE SOLUTION.

Wattsun provides a portable, easy-to-use, plug & play, off-grid power supply. Called 'The Wattsun One', it can be charged with renewable energy. It does not produce emissions (CO₂, NOx), has no odour, and is completely silent.

VALUE PROPOSITION.

- Cost effective compared to traditional solutions like generators.
- Enables the use of green power.
- User friendly.
- Portable.





Llacuna 162
08018 Barcelona
Spain
msanmarti@bambooenergy.tech
www.bambooenergy.tech

✓ STARTING SALES

CUSTOMER REFERENCES

TotalEnergies, Nexus Energia,
ElectraCeldense, Atlas Energia,
Agrienergia, Peusa, Trebol Energia,
Grupo Enhol, Grupo Cuerva, Schneider
Electric



MARKET SEGMENTS
Power DSO
Energy Storage Solutions · Power TSO



Bamboo Energy · Spain

PRODUCT Bamboo Energy

Empowering your flexibility

THE NEED.

While energy markets are being opened up to demand, energy consumers are not able to profit from this. Access to cleaner and cheaper energy should be democratised by providing ways to monetise the flexibility of energy assets and integrate renewable energy sources.

THE SOLUTION.

A platform for retailers that manages the flexible energy markets on both the supply and demand side. The software platform of choice for demand aggregation, it offers both modular architecture and a versatile platform and is able to adapt to customer requirements and regulations. The technology has an artificial intelligence core that enables tailored solutions while reducing operating costs.

VALUE PROPOSITION.

- Modular architecture.
- Versatile platform.
- AI core allows for tailored solutions and reduced operating costs.
- Can manage all types of demand flexibility.





ENEIDA.IO

MARKET SEGMENTS

Power DSO

Energy Storage Solutions · Municipality · Off Grid

B

ENEIDA · Portugal

Rua Alexandre Herculano 21
3000-019 Coimbra
Portugal

cpt@eneida.io
www.eneida.io

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

SSEN, UKPN (UK),
Powerco (New Zealand),
E-redes (Portugal),
Enexis (Netherlands)

PRODUCT eneida DeepGrid®

An operational analytics platform that manages LV networks

THE NEED.

Distribution system operators (DSOs) face multiple challenges: an increased use of renewables and electric vehicles, a growing demand for energy, new regulation and an ageing infrastructure requires them to search for new optimisation solutions.

THE SOLUTION.

On the road to ZEN (the zero-emission neighbourhood), eneida.io's operational analytics platform DeepGrid® is an open, modular and collaborative platform that combines smart sensor networks with data analytics. It enables distribution operators and their operational teams to better manage their low voltage (LV) network. DeepGrid complements eneida.io's flagship products: EdgeSense, a smart sensor; EdgeForce, a mobile application; Discovery, an interactive platform; and LV Applications.

VALUE PROPOSITION.

- Allows for a higher penetration of renewables, electric vehicles and distributed energy resources.
- Optimises photovoltaic hosting capacity.
- Improves reliability and quality of service for distribution system operators.
- Provides explicit learning mechanisms for continuously improved recommendations.
- Improves asset productivity: does more with less.
- Increases efficiency, security and safety, reducing risk.
- Reduces capital expenditures and operating expenses (CAPEX and OPEX).





MARKET SEGMENTS

Power DSO

Power TSO

B

Energiot · Spain

Avenida de Can Domènech
(Campus de la UAB) Edificio Eureka
08193 Cerdanyola del Vallès,
Barcelona, Spain

pablo.ribeiro@energiot.com
www.energiot.com

✓ PILOT

CUSTOMER REFERENCES

ALLIANDER, 2024, Netherlands.
Use Case: smart monitoring and predictive maintenance of substation transformers. Impact: increase lifetime of the asset and avoid accidents.

ELIA, 2024, Belgium. Use case: IoT device for Dynamic Line Rating (DLR) for HTLS powerlines. Impact: Increasing capacity of power lines, improvement of integration with renewable sources.

EDP, 2023, Spain. Use Case: IoT devices for smart monitoring and bird protection for power grids. Impact: Data to improve DSO operation. Reduction of accidents caused by birdlife



PRODUCT

Global battery-free IoT network for a smarter grid

IoT devices for grids that enhance energy efficiency, reduce costs and boost renewables

THE NEED.

The maintenance and operation of the power grid remains dangerous, inefficient and expensive. Issues of energy loss, power outages, accidents, bird electrocution, integration with renewable sources, and redundant maintenance to assure power reliability must be addressed.

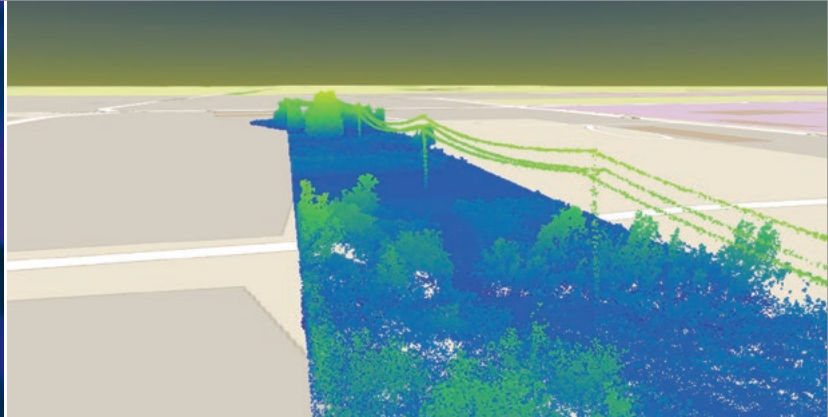
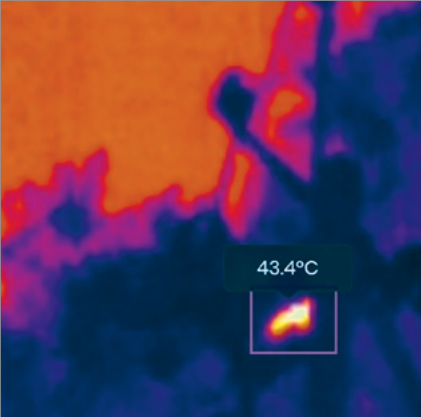
THE SOLUTION.

An end-to-end IoT solution for 24/7 intelligent monitoring that uses self-powered IoT devices with integrated sensors that monitor any grid asset: conductor, transformer, substation, or tower. Grid analytics allow grid operators to avoid accidents, increase renewable energy dispatching, and reduce costs. There is also a solution using AI and a magnetic field to avoid bird electrocution. Devices use a patented piezoelectric energy harvesting technology.

VALUE PROPOSITION.

- Maintenance and operation cost reduction.
- Autonomous intelligence for a smarter grid.
- Predictive maintenance.
- Dynamic line rating (DLR) and renewable sources integration.
- Detection and avoidance of accidents and fraud.
- Detection and avoidance of power cuts, improving reliability as per the SAIDI index.
- Bird protection for electrocution accidents.





MARKET SEGMENTS

Power DSO

Power TSO

B

Hepta Insights · Estonia

Paju 2
50603 Tartu, Tartumaa
Estonia
elviss@heptainsights.com
www.heptainsights.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

E-REDES (EDP Group, Portuguese DSO)
Saesa (Chilean DSO)
Transener (Argentinian TSO)
Transelec (Chilean TSO)
KEDS (Kosovan DSO)
Electricidade de Madeira (Portuguese DSO)
Enefit Connect (Estonian DSO)
Elering (Estonian TSO)
Sadales tikls (Latvian DSO)
Kungälv Energi (Swedish DSO)
Lerum Energi (Swedish DSO)
Imatra Elekter (Estonian DSO)
Kymenlaakson Sähkö (Finnish DSO)
Fingrid (Finnish TSO)
DTEK (Ukrainian DSO)
and others

PRODUCT Hepta Insights

Bringing automated airborne analysis to power lines, saving time, money and the environment

THE NEED.

The EU has over 11 million kilometres of power transmission and distribution lines. Currently, 90% of the critical infrastructure inspections are made by on-foot patrols; these manual inspections are demanding on resources and prone to error.

THE SOLUTION.

Hepta has developed an AI-driven power line analysis platform that identifies defects from photos. The platform allows infrastructure owners to have up to 250% faster inspection cycles while receiving a full overview of their assets. Deploying continuous machine learning enables the automation of up to 90% of photo analysis work, thus analysing a high number of images at a rapid pace. With automated defect reports and vegetation analysis, customers can make better and less error-prone decisions.

VALUE PROPOSITION.

- AI-driven automation.
- Comprehensive service.
- Cost-effectiveness.
- Digitalisation.
- Turnkey project development.
- Ever-improving detection models.



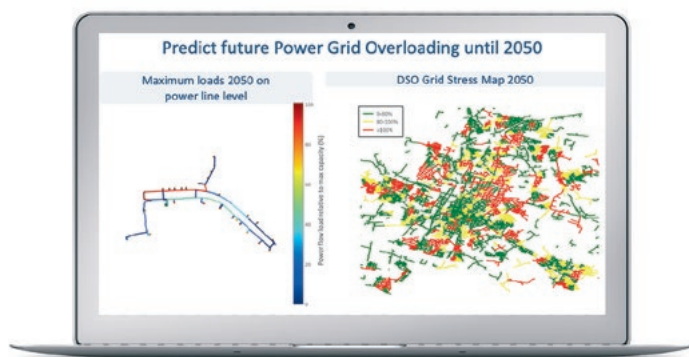


Parking 6
85748 Garching, Bavaria
Germany
manuela.pehle@olt-dss.com
www.omegalambdatec.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request.



MARKET SEGMENTS

Power DSO

Municipality · Power TSO

B

OmegaLambdaTec · Germany

PRODUCT Smart Grid Simulation Model

Enhance your grid with precision and foresight

THE NEED.

In Germany alone, the investment requirement for distribution grids is estimated at €150 billion over the next 20 years. Grid operators must rise to this major challenge of the energy transition as the proportion of volatile renewable energies and the overall demand for electricity continue to rise.

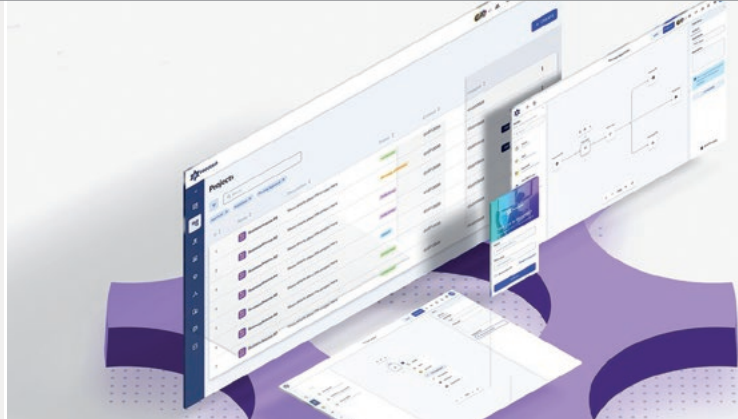
THE SOLUTION.

With its state-of-the-art smart grid simulation model, OmegaLambdaTec offers an intelligent alternative to the widespread expansion of copper and steel. The award-winning Smart Grid Simulation Model uses advanced simulation methods to accurately map the actual demand for the next 50 years. In practical use for 3 years, and proven many times over, the model offers grid operators multiple advantages.

VALUE PROPOSITION.

- Precise predictions of the ramp-up of electromobility, PV systems and heat pumps.
- Line-accurate load simulations for the coming decades.
- Identification of all critical grid components for which there is a need for expansion in the coming decades.
- Transparent recommendations for action for needs-based and cost-optimised grid expansion planning.
- Quantitative optimisation potentials for future, data-based, intelligent real-time grid monitoring.





MARKET SEGMENTS

Power DSO

Gas DSO · Gas TSO · Power TSO

B

Ringhel · Romania

Geniului Boulevard 14
060117 Bucharest, 6th District
Romania

mihai.darzan@ringhel.com
www.ringhel.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Engie, E.ON, CEZ, Veolia, MET, EFT,
Monsson, Restart Energy, Lukoil

Case studies: <https://www.ringhel.com/clients-ringhel/case-study>

Head of ETS, ENGIE Romania:
"Throughout the development of the GEFEE BRP platform, we have had the opening and involvement of all Ringhel team members in order to obtain a solution that is as easy to adapt to the changing market demands. Any new request from the ENGIE Romania team received an answer and a resolution due to the seriousness and innovative spirit that our partner has shown."

PRODUCT Ringhe

End-to-end software solutions for power and gas companies

THE NEED.

Energy companies need to design and manage a wide variety of processes and have a hard time keeping pace with technological developments (including IT). They also lose money due to the slow response of the market and regulatory changes.

THE SOLUTION.

Ringhel offers minimal code software: visual software development tooling and standardised, reusable building-blocks, instead of the traditional form of handwriting and re-writing code. Developed by people with business acumen, not programmers, the company is a market leader in Romania (over 50% of market) and has already scaled abroad.

VALUE PROPOSITION.

- Accelerated results – proven 50-70% faster deployment (average 3-6 months).
- Integration with other technologies.
- Adaptable tech, built especially for energy markets and market specific – worked out with local integrators and partners.





MARKET SEGMENTS

Power DSO

Onshore Wind · Power TSO · Renewable gas & biofuels

B

TokWise · Bulgaria

Prof. Haralambi Tachev 18
1164 Sofia
Bulgaria
office@tokwise.com
www.tokwise.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Energy Service Companies

BayWa r.e. / Germany
Sunnic GmbH / Germany & Austria
Total Energies / France

IPPs

Encavis GmbH / Germany
Enery GmbH / Austria, Romania & Bulgaria
ElNova JSC / Bulgaria
EON Bulgaria 1 / Bulgaria

C&I Prosumers

AGC Glass Europe / Belgium

PRODUCT TokWise

Transforms trading in renewables

THE NEED.

The post-subsidy world poses new challenges for investors in renewables: growing merchant exposure, price volatility and decentralisation among them. Players need to develop more active market participation to scale future asset investments and maximise returns.

THE SOLUTION.

TokWise creates market optimisation and independence for renewables portfolios. Its software enables power producers, as well as industrial electricity consumers, to link their assets directly to power exchanges and thereby take control of the purchase and sale of electricity. The platform bridges the gap between physical assets and complex electricity markets, offering scalable data management and AI native algos for complete automation of trading decisions.

VALUE PROPOSITION.

- AI technology to trade renewable energy on various short-term markets.
- Advanced automation for short time-to-market operations.
- Centralised SaaS offers complete control.
- Customers benefit from faster insights and data-driven trading.
- Increased responsiveness to remain competitive in a dynamic market.
- Transparent and open AI models optimises trading decisions.





MARKET SEGMENTS

Power TSO

B

Enline · Portugal

Combatentes da Grande Guerra 14
5370-468 Mirandela
Tras-os-Montes
Portugal

info@enline-transmission.com
www.enline-transmission.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Red Eléctrica de España, Celepsa,
ISA REP, State Grid, ElectraNet,
Electricidade de Moçambique,
50Hz, REN

PRODUCT Digital twin technologies for power grids

Monitoring system combining enhanced power, fault location and optimised engineering

THE NEED.

With the increased deployment of renewable energy, traditional power grids face the strain of rising demand and integrating fluctuating renewable sources. There's an urgent need for real-time grid insights and improved power management.

THE SOLUTION.

Enline presents a groundbreaking solution leveraging proprietary virtual-sensor technology and predictive analytics. It offers real-time grid monitoring, creating a digital twin of the infrastructure. The solution also incorporates dynamic line rating technology, enhancing the capacity of existing transmission lines.

VALUE PROPOSITION.

- Technology facilitates proactive grid management via real-time monitoring and advanced analytics.
- Empowers utilities to optimise existing infrastructure and integrate renewable energy more safely and efficiently, saving billions and unblocking transmission capacity.
- Result is greater grid control, enhanced reliability, and significant contribution to a sustainable, electric future.





MARKET SEGMENTS

Power TSO

Gas DSO · Gas TSO · Power DSO · Transport & mobility

B

Spottitt · *United Kingdom*

Electron Building, Fermi Ave
OX11 0QR Harwell, Oxford
United Kingdom

lucy.kennedy@spottitt.com
www.spottitt.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

National Grid (UK), National Gas (UK), SP Energy Networks (Scotland), Equinor (Norway, France, Belgium), Group E (Switzerland), A2A (Italy), KSS Energia (Finland), PSG Gas (Poland), E-Distributie Banat (Romania)

PRODUCT Spottitt Metrics Factory

AI-powered geospatial analytics for energy, environment and infrastructure

THE NEED.

Utilities and infrastructure owners need geospatial data to optimise their assets' design, construction, operation, and maintenance. However, data from satellites, drones and other sensors come in different forms, making it challenging to leverage the generated insights.

THE SOLUTION.

AI-powered geospatial analytics that leverage satellite, climate, and other data sources. The platform captures raw geospatial data and transforms it into actionable insights to support asset managers throughout the entire lifecycle of the asset, from site selection and route planning to monitoring construction progress, vegetation, third-party works, land movements, climate conditions, and biodiversity.

VALUE PROPOSITION.

- Digital innovation that improves asset O&M, reliability and climate resiliency.
- Fully covered value chain, from accessing the right sources of raw data to delivering decision-maker-ready analytics.
- User-friendly output analytics is available as reports and heat maps, mapped to the assets and provided in GIS format.
- Accuracy down to 30 cm resolution and speed of analysis within 7 days.
- \$ millions cheaper and years quicker than developing in-house expertise.



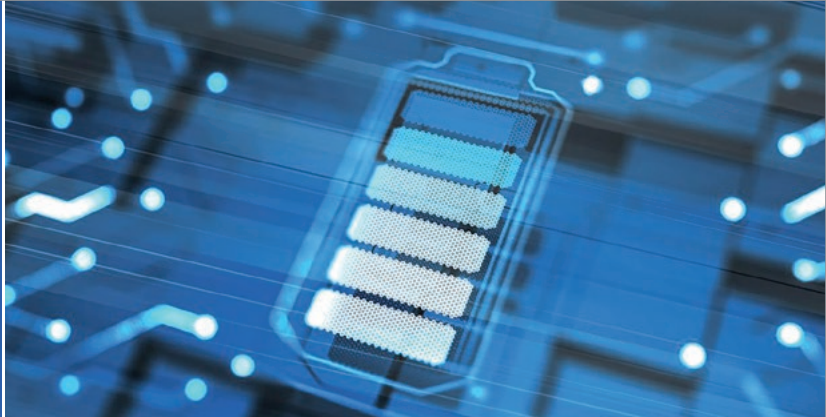
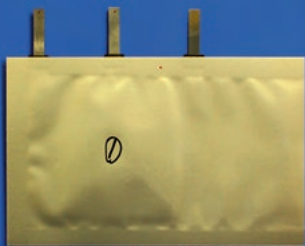
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C

Energy
storage



Rue Nicolas 11
L-2176 Luxembourg
Luxembourg
tadashi.kubo@acbiode.com
www.acbiode.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request



MARKET SEGMENTS

Energy Storage Solutions

Transport & mobility



AC Biode · *Luxembourg*

PRODUCT

Standalone AC batteries

A new class of battery for present and future industries to increase productivity

THE NEED.

Current batteries store energy in DC (direct current). However, over 90 percent of appliances use only AC (alternating current) power sources. Energy loss in conversions between AC and DC is unproductive.

THE SOLUTION.

The world's first standalone AC batteries and special electric circuits that are safer, 30 percent more compact and have double the usual life cycle. All the existing materials are utilised as well as battery production lines, and this idea can be applied not only to Li-ion batteries but to any other type. The system, including the Cockcroft-Walton Multiplier, is flexible and can be adapted to existing systems.

VALUE PROPOSITION.

- Safer than current DC Li-ion batteries.
- 15 percent higher capacity.
- Up to 30 percent more compact in terms of volume.
- Double the life cycle.
- All the existing materials and battery production lines utilised.





Kungsgatan 70b
753 18 Uppsala
Sweden

hi@altris.se
www.altris.se

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Non Residential building · Ocean Power



Altris · Sweden

PRODUCT Fennac

Sustainable high energy density cathode material for stationary storage solutions

THE NEED.

The battery production industry has a need for low-cost, sustainable electrode materials that are free from nickel, cobalt and lithium. Furthermore, batteries capable of low temperature performance are in strong demand.

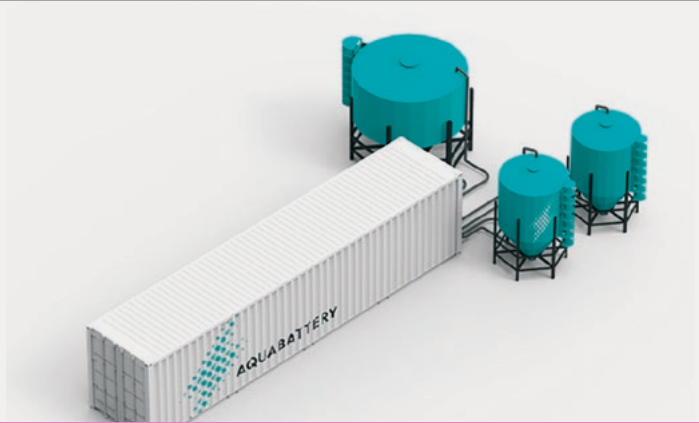
THE SOLUTION.

The solution is a practical cathode material for sodium batteries that is free from nickel, cobalt and lithium. Its elements – sodium, iron, carbon, nitrogen – are accessible, economical and pose no health or environmental hazard. The production process is cost competitive since it runs at low temperatures and pressures. Unlike li-ion batteries, it enables reliable sub-zero performance.

VALUE PROPOSITION.

- Can be transported and stored without risk of explosion.
- Cheapest battery chemistry in the long run.
- Good performance in below 0°C environment.
- High energy density and low investment needed to scale production.
- The most eco-friendly battery technology available.





Eikenlaan 255C
2404 BP Alphen aan den Rijn
The Netherlands
janneke.tjonpiangi@aquabattery.nl
www.aquabattery.nl

✓ PILOT

CUSTOMER REFERENCES

Statkraft

MARKET SEGMENTS

Energy Storage Solutions

Battery industry



AquaBattery · The Netherlands

PRODUCT AquaBattery

Revolutionising long duration energy storage

THE NEED.

With the world moving to net-zero, solar and wind will dominate the power mix. They provide for green, yet unpredictable energy generation. This causes security of supply concerns and puts a heavy load on power infrastructure, resulting in volatile prices, high grid costs and energy uncertainty.

THE SOLUTION.

AquaBattery offers a long duration energy storage solution by storing electricity in just table salt and water. By using abundant and locally available materials, the battery becomes affordable, scalable, sustainable and safe, without risk of fire hazard or explosion. What's more, it enables the integration of intermittent solar and wind into constrained grids, ensuring that renewable energy is available at times when the sun does not shine and the wind does not blow.

VALUE PROPOSITION.

- Targets "behind the meter" applications at commercial and industrial players faced with high energy bills and the desire to decarbonise.
- Optimises value from decentralised renewable energy assets by reducing energy costs, grid fees and CO₂ emissions.
- Helps customers deal with grid congestion and ensures 24/7 access to renewable power.





BASQUEVOLT

Parque Tecnológico I
Albert Einstein° 35
01510 Vitoria-Gasteiz, Álava
Spain

fcarranza@basquevolt.com
www.basquevolt.com/en

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request



MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Industry

C

Basquevolt · Spain

PRODUCT Basquevolt

The safest and most competitive solid-state battery

THE NEED.

A major roadblock in the race to phase out fossil fuels is that lithium batteries currently do not meet customers' requirements in ensuring a complete transition in mobility and energy applications.

THE SOLUTION.

A new generation of solid polymer composite and semi-solid electrolytes has resulted from a decade of research by Prof. Michel Armand, one of the fathers of modern lithium battery development. The research team led by Professor Armand has been able to improve the composite polymer electrolytes (technology he discovered in 1978) and solve the main solid-state battery challenges. This unique technology brings lithium batteries beyond the state of the art in cost, safety and energy density.

VALUE PROPOSITION.

- Commitment to develop the highest quality battery materials and cells.
- Set to make possible the mass deployment of electric transportation, stationary energy storage and advanced portable devices.
- State of the art in terms of cost, safety and energy density.





Polígono Ipertergui II, 12
31160 Orkoien, Navarra
Spain

gonzalo.muley@beeplanetfactory.com
www.beeplanetfactory.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Iberdrola: 440kWh for support to charging infrastructure.

Solarfam: 84kWh + PV installation for a farm.

Mercedes-Benz Vitoria factory: 42kWh + PV installation for support to charging infrastructure and self-consumption.

More available on request.



MARKET SEGMENTS

Energy Storage Solutions

Industry · Municipality · Non Residential building



BeePlanet Factory · Spain

PRODUCT BZell, BCube, BCompact & BHive

Sustainable energy storage solutions based on automotive sector batteries

THE NEED.

Consumers face frequent power outages and rising electricity costs, causing costly interruptions for households and businesses. Additionally, integrating renewable energy sources like solar and wind presents the challenge of efficiently managing surplus energy generated during low-demand periods.

THE SOLUTION.

Battery energy storage systems allow users to store energy during periods of low consumption and utilise it when demand is high and electricity rates are elevated. This ensures continuous energy supply during outages and optimises the use of renewable energy by reducing surplus wastage. Moreover, battery systems contribute to grid stability by offering services such as frequency regulation and demand peak shaving, benefitting both consumers and energy service providers alike.

VALUE PROPOSITION.

- High-performance batteries: high quality and safety standards aligned with those of the automotive industry.
- Modularity: capacity expandable from 5kWh up to 2MWh.
- Smart grids and energy efficiency: reduces over 70% of energy bills.
- Own technology: BMS and EMS.
- Interoperability: facilitates the optimisation of various technologies.
- Service: interaction with the client at every stage of the project.
- Complete solution: from hardware to software.
- Sustainability: +60% reduction in CO₂ footprint compared to a new battery.





Avenida José Francisco Guerreiro,
nº28
Paiã Park, Armazém A2.12
1675-078 Odivelas
Portugal

info@c2cnewcap.com
www.c2cnewcap.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Galp



MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Transport & mobility

C

Charge2Change · *Portugal*

PRODUCT C2C Go-Start

Supercapacitor solution for sustainable mobility

THE NEED.

Trucks are responsible for moving at least 70% of goods in Europe. Although the battery has advanced in other applications, heavy vehicles still use the same lead-acid battery technology that causes dead-starts and excessive idling while the vehicle is stationary.

THE SOLUTION.

GO-START is a supercapacitor module especially made for EU trucks. Easy to install, it is provided along with a deep-cycle battery, both of which are installed in the battery compartment as a plug and play solution. C2C is the first company to directly replace the original lead-acid batteries with a supercapacitor-based solution that does not require modifications to the vehicle.

VALUE PROPOSITION.

- €1500 fuel savings per year.
- Drastic reduction of lead – a highly toxic metal.
- Reduction of need to replace battery.
- Reduction of costly road problems related to batteries.





Westervoortsedijk (Building BF) 73
6827 AV Arnhem
The Netherlands
info@elestor.com
www.elestor.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

In April 2021, Elestor signed an agreement with the Dutch corporate, Royal Vopak, the world's leading independent tank storage company on sea port terminals, for the installation of a 500kW/3MWh storage system. After initial test and validation of the business case, the system will be scaled to industrial size (25 MW / 250 MWh).



MARKET SEGMENTS

Energy Storage Solutions

Off Grid



Elestor · The Netherlands

PRODUCT Elestor - electricity storage (LDES)

Revolutionary low-cost electricity storage in a hydrogen-X flow battery

THE NEED.

Given the unpredictability of renewable energy producers, such as sun and wind, grid owners are looking for cost-effective means of storing electricity. This is essential to solve issues such as instability and potential overload of the electricity grid.

THE SOLUTION.

Elestor electricity storage systems are based on hydrogen-X flow battery technology. Originally developed by NASA, Elestor has further engineered the concept to enable its use in a wide variety of grid and industrial applications. The active materials are low-priced as they are abundantly available on a global scale. The technology enables a high power density and high energy density, contributing to the reduction of storage costs.

VALUE PROPOSITION.

- Fast reaction kinetics, resulting in very short response times.
- High accessibility, enabling easy maintenance and updates.
- Independent configuration of storage power (MW) and capacity (MWh).
- Modularly scalable, up to 10s of MW and 100s of MWh.
- No self-discharge when system is idle.
- Storage costs per MWh 5-10 times lower than incumbent systems.





Tolminska 35
24000 Subotica
Serbia
christoph.siara@elevenes.com
www.elevenes.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Transport & mobility

C

ElevenEs · Serbia

PRODUCT ElevenEs

Empower everything

THE NEED.

While global demand for battery cells is surging a key challenge remains: how to successfully scale in the new battery cell manufacturing era.

THE SOLUTION.

ElevenEs leads Europe's electrification with prismatic LFP cells and an innovative cell-to-pack (CTP) solution, developed at a cutting-edge pilot plant. Cells are cost-effective, nickel and cobalt-free, safer (releasing three times less heat in thermal runaway), and have a lifespan of up to three times longer. ElevenEs is making clean energy more accessible, advancing the benefits of electrification for a broader consumer base.

VALUE PROPOSITION.

- A unique value proposition, leveraging the extensive battery industry expertise of our founding shareholder, who has overseen 4GWh of electrode manufacturing for over 25 years.
- Proficiency in high-precision aluminium processing – coating, slitting, cutting, and deep-drawing – optimises manufacturing for affordable cells at scale.
- A blend of experience and capabilities distinguishes ElevenEs in Europe's battery industry.





#709–700 West Pender Street
V6C 1G8 Vancouver, BC
Canada

ron@mn25.ca
www.mn25.ca

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Energy Storage Solutions

Battery industry

C

Euro Manganese · Canada

PRODUCT

Euro Manganese – Chvaletice Manganese Project

Recycling yesterday's waste to support Europe's e-mobility future

THE NEED.

High purity manganese has the potential to make EVs more affordable. Volkswagen, Stellantis, Tesla, Renault, BASF and others have committed to using manganese in their battery chemistries, while major manganese market deficits are appearing on the horizon as the gap between supply and demand widens.

THE SOLUTION.

Euro Manganese's Chvaletice Manganese Project is well positioned to help fulfil the automotive and battery industry's rapidly-growing need for high purity manganese. Battery raw materials are made by recycling waste in the Czech Republic, in the heart of Europe. The company is set to be the EU's only primary producer of battery grade manganese, with the potential to become a valuable element of Europe's emerging battery value chain.

VALUE PROPOSITION.

- High-purity manganese products are designed to deliver unique environmental, social and economic benefits to local communities, the environment and customers.
- By recycling historic mining waste, the proposed project will clean up a longstanding source of water pollution, create local jobs, and help the EU and its automotive industry move away from polluting fossil fuels as Europe's transition to e-mobility accelerates.





MARKET SEGMENTS

Energy Storage Solutions

Battery industry



Extremadura New Energies · Spain

PRODUCT San José Lithium Project

Integrated underground mine and battery grade lithium chemicals production facility

THE NEED.

In Europe, heavy investment in downstream activities in the lithium battery value chain has resulted in a critical shortfall in sustainably-sourced raw materials, including battery grade lithium chemicals.

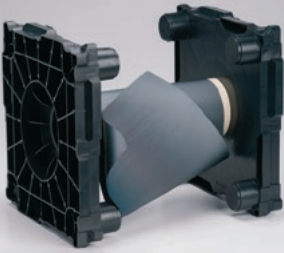
THE SOLUTION.

The Extremadura New Energies' Project represents Europe's 2nd largest hard rock lithium deposit, with a fully integrated lithium chemical conversion plant on site. The mineral is completely processed in the adjacent site until converted into lithium hydroxide, an essential component in the manufacture of rechargeable lithium-ion batteries, particularly those used in electric vehicles.

VALUE PROPOSITION.

- Battery grade chemicals produced in Europe using sustainable processing techniques.
- Strategically located in southern Spain for the European market.
- Contributes 20,000ktpa (kilo-tonnes per annum) of battery grade lithium chemicals to the European market.





Luchthavenweg 10
5657 EB Eindhoven
Noord-Brabant
The Netherlands
rob.anstey@graphnx.com
www.gdinrg.com

✓ PILOT

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Industry · Transport & mobility



GDI · The Netherlands

PRODUCT 100% Silicon Anodes for Li-ion batteries

100% silicon anodes that enable longer-lasting, faster-charging batteries with a secure supply chain

THE NEED.

Electrification is creating a growing demand for batteries. However, they must not only offer higher energy density, faster charging and an excellent safety profile, but have a secure supply chain and be manufactured with a low-carbon footprint.

THE SOLUTION.

GDI's 100% silicon anodes replace traditional graphite anodes in lithium-ion batteries, affording 30% higher energy density and 3x faster charging without sacrificing safety. The supply chain of copper foil and silane gas precursor is entirely EU/US-based, with manufacturing taking place in the Netherlands and Germany. Automated roll-to-roll production is highly efficient, leveraging industrial equipment and facilities that already operate at scale.

VALUE PROPOSITION.

- GDI supplies customers with rolls of finished anode and works with them to optimise battery cell architectures to meet differing needs.
- Higher-performing batteries for use across many industries.
- A fully EU/US supply chain and manufacturing operation mitigates global geopolitical and supply chain risk.
- Designed for safety, batteries with GDI anodes have passed extensive nail penetration safety testing.
- Unlike traditional graphite anodes, the production of GDI anodes is entirely carbon free.





MARKET SEGMENTS

Energy Storage Solutions

Battery industry

C

Geomet · Czech Republic

Ruská 287
417 01 Dubí
Czech Republic
info@geometlithium.com
www.geomet-cz.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request

PRODUCT

Cinovec Lithium

Production of battery-grade lithium chemicals

THE NEED.

Due to the significant boom in electro mobility and the urgent need to store energy, global demand for lithium is growing rapidly. However, this unique light metal is in very short supply.

THE SOLUTION.

Cinovec is a lithium and tin mining project in the Czech Republic. The country holds one of the most important deposits of the metal in Europe, with some 3% to 5% of the world's lithium reserves located below Cínovec in the Ore Mountains. Geomet's focus is primarily on the exploration of lithium as a strategic raw material for the production of car batteries, as well as its use as a critical component in the cycle of production and accumulation of electricity produced from alternative sources.

VALUE PROPOSITION.

- The mine aims to produce battery-grade lithium products to meet both the demand for electric vehicle makers and firms involved in electricity storage systems.
- Job opportunities in the mine itself and also in related industries and services.
- Funds added to the budget of the city of Dubí from fees for extracted minerals.





HEATVENTORS

Tancsics M. u. 15
5400 Mezőtur
Hungary
hello@heatventors.com
www.heatventors.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

MVM Hun: data c. cooling, 2019 25 kWh, payback: 4 yrs. **Antenna Hun:** data c. cooling, 2020 50 kWh, pb: 5 yrs. **E.ON Hun:** gas eng. heat recov., 2020 50 kWh, pb 2 yrs. **Alperia Italy:** district heating, 2020 50 kWh, pb: 3,8 yrs. **Budapest Waterworks:** 2022 data c. cooling, 2*50kWh. **Sopron Hotel Hun:** 2022 cooling, 25kWh, Generali Hun: 2022, 50kWh. **Engie France:** 2023 district heat., 50 kWh. **Bosch Hun:** 2022 office cooling. **Union Hun:** 2023 office cooling, 2*25 kWh+ 10 kWh. **Egis Hun:** 2023 data c. cooling 50 + 25 kWh. **Ilka Corner, Hun:** 2023 office cooling 50 kWh. **Lartech Hun:** 2023 office cooling 25 Kwh



MARKET SEGMENTS

Energy Storage Solutions

District Heating Grid · Heating & Cooling



HeatVentors · Hungary

PRODUCT HeatTank

An intelligent thermal battery

THE NEED.

Energy is wasted in nearly every thermal energy system worldwide. €20 billion or 250 million metric tonnes of CO₂ equivalent of greenhouse gases could be saved in Europe alone through optimal thermal energy storage.

THE SOLUTION.

Traditionally, heat is stored by changing the temperature of the water. Instead of water, HeatTank incorporates special biomaterials, called phase change materials (PCM). By melting and solidification it is possible to reduce storage size by almost 90 percent, saving at least 20-50 percent energy, with a total return on investment of between 3-5 years. Energy systems become more efficient and operational costs are reduced.

VALUE PROPOSITION.

Efficient cooling solution for an existing system, with:

- Energy-saving of 20-50 percent.
- Cost reduction: 3-5 years of ROI.
- Operation security.
- 100 percent SLA.
- Easy integration.

Additional benefits in case of a new system, include:

- Peak performance management -> acquisition cost reduction.
- Smaller cooling system, pipes and fittings.
- Easier electricity system.
- Retail in higher price.
- Innovation means better certification.





Boulevard Marcel Sembat 41
69200 Venissieux
France
remy.chaintreau@mecaware.com
www.mecaware.com

✓ PILOT

CUSTOMER REFERENCES

VERKOR
(Manufacturer of EV Battery) 2023
Project of Pilote line in Dunkirk, France
Budget : 15M€
Secure strategic and sustainable
metals by recycling battery



MARKET SEGMENTS

Energy Storage Solutions

Battery industry



Mecaware · France

PRODUCT Mecaware

Strategic raw materials produced by recycling end-of-life batteries and scraps

THE NEED.

The European battery manufacturing industry faces major challenges in terms of raw material supply and the recycling of production scraps, the process of which is consuming these very same raw materials.

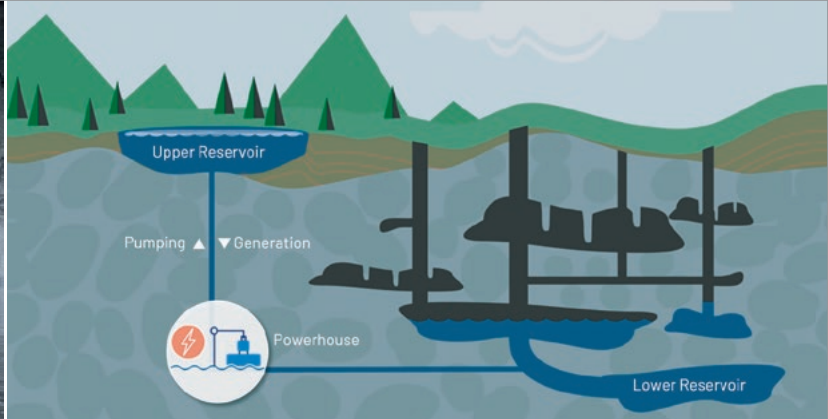
THE SOLUTION.

MECAWARE produces critical and strategic raw materials by recycling technological waste from end-of-life batteries and production scraps. The company designs and deploys in situ game-changing and disruptive eco² (ecologically and economically efficient) industrial solutions. This solution is an innovative technology based on synergistic CO₂ capture and critical metal recycling.

VALUE PROPOSITION.

- Secures 70-80 percent volume and price of total EV battery production costs.
- Reduces 30-50 percent of EV battery recycling costs vs conventional hydrometallurgy recycling processes.
- Delivers sustainable and recycled metals according to future EU regulations (Critical Raw Material Act).
- Allows us to develop the local industrial circular economy and secure the supply chain of critical and strategic metals.





MARKET SEGMENTS

Energy Storage Solutions

C

Mine Storage · Sweden

Torsgatan 11, 8tr
111 23 Stockholm
Sweden

thomas.johansson@minestorage.com
www.minestorage.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Strategic partnerships with Dairyland Power Cooperative (US market) and Mälarenergi (Swedish market)

PRODUCT Mine Storage

Enabling the sustainable energy transition

THE NEED.

The requirement to tackle the climate crisis and the volatile energy market has become urgent. In the move towards weather-dependent renewable production, there is increasingly dependency on energy storage to secure and balance the electricity supply.

THE SOLUTION.

Mine storage technology is a proven, scalable way to safely store and distribute energy and help balance transmission grids. Mine Storage develops grid-scale energy storage in underground mines using closed-loop pumped storage hydropower. By leveraging the height differences in mines, large quantities of energy are stored using water and gravity. The operational model for each mine storage facility is developed to optimise revenue streams from local markets.

VALUE PROPOSITION.

- Grid-scale energy storage that can be scaled globally.
- Proven technology applied in an innovative setting.
- Clean solution using water and gravity that does not rely on rare-earth minerals.
- High round-trip efficiency of 70-85 percent.
- Long lifecycle resulting in a low levelized cost of storage.
- Leveraging existing infrastructure by making closed mines a circular energy asset.
- Potential to scale globally as there are more than 1 million closed mines.





northvolt

Gamla Brokatan 26
111 20 Stockholm
Sweden
jasmin.noori@northvolt.com
www.northvolt.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Industry · Transport & mobility

C

Northvolt · Sweden

PRODUCT Large scale battery factory

The next generation lithium-ion battery factory

THE NEED.

The need for batteries in the power, transport and industrial sectors is becoming increasingly urgent.

THE SOLUTION.

Northvolt is building a next generation lithium-ion battery factory under a new concept that focuses on scale, vertical integration and highly controlled manufacturing. The execution is fundamentally different to current battery production facilities, with the aim of creating a circular supply system and using clean energy in production. The factory has a capacity of 125 MWh/year (demo line and research facility) to 32 GWh/year (main production site), with a high level of automation.

VALUE PROPOSITION.

- Ambitious and industrialised recycling process.
- Lower cost level.
- Supporting the transition to electrification.
- Sustainable: production close to zero carbon emission.





Strada Oxigenului
077035 București
Romania

vicentiu.ciobanu@primebatteries.com
www.primebatteries.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

The company is a fully operational ESS factory with a 200MWh production and 21mEURO revenues for 2023 and ~+70mEUR forecast for 2024.

Some of the clients are CEZ, Ingeteam, Monsson, Terberg.

MARKET SEGMENTS

Energy Storage Solutions

Battery industry

C

Prime · Romania

PRODUCT Prime

European energy storage systems manufacturer delivers solutions both behind and after the meter

THE NEED.

The integration of renewable energy sources (RES), peak load control, the necessity for grid resilience and the increasing number of electric cars are all driving the need for energy storage systems (EES). As RES become more common, the demand for efficient ESS increases.

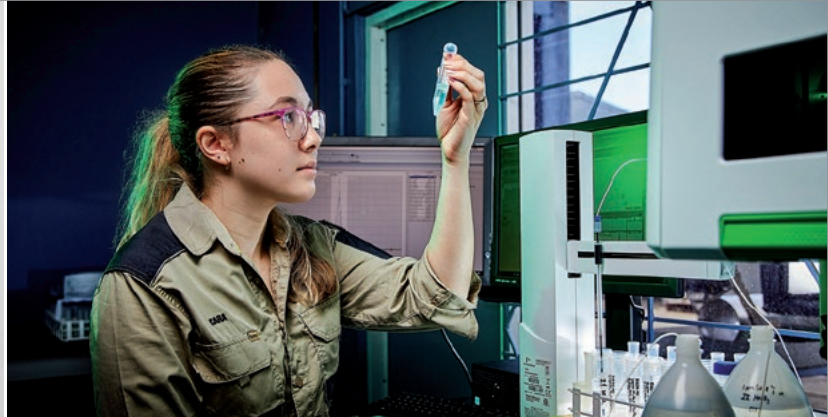
THE SOLUTION.

PRIME is a leading European ESS manufacturer that delivers solutions both behind and after the meter. ESS play a crucial role in enabling the transition from fossil fuels to renewable energies by solving issues of intermittency and grid balancing, improving the flexibility, reliability and sustainability of the energy system. Storage reduces greenhouse gas emissions by allowing more RES to be integrated into the grid to replace fossil fuels during peak demand periods.

VALUE PROPOSITION.

- Vertical integration ensures high quality at every stage of production, allowing for value-added, customisable energy storage solutions that stay ahead of the competition.
- Batteries have a capacity from several kWh that can be used by households, to 3.5MWh container solutions that can be merged and used on a utility-scale.
- 80% of value-added product is generated in-house.





Eagle Street 10, Level 32, QLD
4000 Brisbane, Australia
Australia

info@purebatterytech.com
www.purebatterytech.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Available on request



MARKET SEGMENTS

Energy Storage Solutions

Battery industry

C

Pure Battery Tech · Australia

PRODUCT Pure Battery Technologies

Producers of superior pCAM products for EV batteries

THE NEED.

Common processes to produce battery materials are inefficient and result in excessive CO₂ emissions. For battery and car manufacturers to meet their environmental obligations in line with legislation, an increased focus on ways to reduce emissions created through the battery supply chain is needed.

THE SOLUTION.

Pure Battery Technologies solves this problem through smarter and simpler technology, which refines intermediate products and black mass into precursor cathode-active material (pCAM) for EV batteries. This is done in a way which is more affordable and with superior environmental care. PBT's technology refines both raw material (intermediates such as MHP) as well as black mass, thereby closing the recycling loop and making the end products truly environmentally friendly.

VALUE PROPOSITION.

- To respond to the global demand for EVs, Pure Battery Technologies (PBT) has developed a smarter, simpler and greener technology to produce pCAM from either primary or recycled materials.
- As a global provider, PBT enables battery cell makers to obtain flexible, clean and cost-effective battery materials while improving their environmental credentials.
- Driven by excellence in technology and innovation, PBT continues to provide advanced solutions to the energy crisis.





Masthammsgatan 21
413 29 Göteborg
Sweden
rasmus.bergstrom@repono.com
www.repono.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request



MARKET SEGMENTS

Energy Storage Solutions

C

Repono · Sweden

PRODUCT Repono

Shaping Europe's large-scale sustainable power system for tomorrow

THE NEED.

To cut greenhouse gas emissions by 55% by 2030, the EC has set minimum national targets of 42.5% renewable electricity share. Increased electrification of the economy combined with a growing share of renewables will require the rapid rollout of large-scale energy storage systems (ESS).

THE SOLUTION.

Repono is a pan-European company focused on owning and operating large energy storage systems through a variety of models and using highly automatised processes. There are currently three pillars to how Repono operates: short-term spot markets, ancillary services and power purchase agreements (PPA).

VALUE PROPOSITION.

- Leads a sustainable charge to unlock 100 GWh of ESS by 2030.
- Standardises large-scale ESS deployment across Europe to mitigate power outages, stabilise prices and ensure a clean energy supply.
- Repeatable and scalable solutions make for a bankable business that can rapidly provide the amount of ESS needed on the European market.
- Backed by industry giants and part of a strong sustainable energy ecosystem, Repono leverages unique conditions for rapid replication.





Ebbe Lieberathsgatan 18C
412 65 Göteborg
Sweden

andreas@rivus-batteries.com
www.rivus-batteries.com

✓ PILOT

CUSTOMER REFERENCES

Five customer LOIs signed to date.



MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Power DSO · Power TSO

C

Rivus · Sweden

PRODUCT Rivus Batteries

Long duration energy storage using organic flow batteries

THE NEED.

Long duration energy storage (LDES) is crucial for global renewable energy integration. Current battery technologies, reliant on scarce or critical metals and materials, fall short of meeting the rapidly increasing demand sustainably and cost-effectively.

THE SOLUTION.

Rivus is focused on innovating a single component with an outsized impact: a proprietary water-based organic electrolyte for flow batteries. This energy carrier upgrades flow batteries to meet next generation sustainable energy storage standards, reducing total system costs by 25% and cutting the levelised cost of energy storage by 80% for 4-24 hour storage durations. Importantly, it integrates seamlessly with existing flow battery hardware.

VALUE PROPOSITION.

- Cost-effective: electrolyte prices are expected to be below €100/kWh.
- Safe: non-flammable and non-explosive.
- Eco-friendly: made from abundant organic materials.
- Market-ready: fully compatible with commercially available vanadium flow battery hardware.





SAVANNAH

Salisbury House London Wall
EC2M 5PS London
United Kingdom

info@savannahresources.com
www.savannahresources.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Energy Storage Solutions

Battery industry

C

Savannah · *United Kingdom*

PRODUCT

Mina do Barroso Lithium

Europe's leading conventional lithium project

THE NEED.

Europe's demand for lithium is expected to grow 60x by 2050, but there is no domestic production of battery grade lithium raw material. With global competition set to grow significantly, the European Commission has identified the need to secure stable supplies of responsibly produced feedstocks.

THE SOLUTION.

Mina do Barroso will produce enough lithium raw material for 0.5 million vehicle battery packs each year, could be in operation for over a decade, employ over 200 people, and create hundreds more indirect jobs. The high proportion of renewables in Portugal's energy mix, the location close to market, the electrification of an on-site mining fleet and the sole use of renewables means that power lithium from Mina do Barroso will have a low carbon footprint in the value chain.

VALUE PROPOSITION.

- A 'shovel ready', domestic solution to Europe's growing demand for lithium. In an economic scoping study completed in 2018, the project's after-tax net present value was estimated at US\$241m and its after-tax internal rate of return at 48.6%.
- A successful transition from the current development phase into production and cash flow should generate significant value accretion, not only for investors, but also for society with the creation of long term direct and indirect jobs and new demand for multiple goods and services.





MARKET SEGMENTS

Energy Storage Solutions

Residential Building · Solar PV

C

Silbat · Spain

Av. Doctor Federico Rubio y Galí 75
28040 Madrid
Spain

iluque@silbat.com
www.silbat.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Baker Hughes Co.

PRODUCT Silbat

Long duration electricity storage in melting silicon

THE NEED.

Cost-effective long duration stationary electricity storage is required to enable the predicted and necessary ramp-up of renewables to mitigate climate change. This currently relies on location constrained pumped hydro. Ultra-cheap, portable, fast to deploy technologies are urgently required.

THE SOLUTION.

Silbat has developed a silicon battery that is set to transform the landscape of long duration stationary storage. The solution is based on the latent heat of metal-grade silicon and its back-conversion to electricity using thermophotovoltaics. According to MIT research, cost-effectively turning renewables into dispatchable electricity sources requires long duration storage with capital expenses of less than \$20/kWh. Silbat's battery can do it for less than \$10/kWh.

VALUE PROPOSITION.

- The potential to be extremely cheap <\$10/kWh and enables a 100% RE supply paradigm.
- Highest energy density, only comparable to power-to-gas and superior to the best Li-ion batteries.
- 30 yr lifetime with low O&M (vs. Li-ion ~5yrs. lifetime).
- Highly abundant, widely found raw materials – 1000X than Li-Co-Ni-Mn in Li-ion batteries or Pt-Pd in electrolyser stacks.
- Silent operation and quick start – solid-state conversion, no moving parts.





skeleton⁺

Sepise 7
11415 Tallinn
Estonia
sales@skeletontech.com
www.skeletontech.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Automotive: Honda Performance Development, BMW-Eberspächer, Transportation: Shell, Skoda Transportation, CAF Power & Automation; Grid: Hitachi Energy, Freqcon, GE Power Conversion; Industrial: GE Healthcare, Attabotics, Maja Stuwadoors



MARKET SEGMENTS

Energy Storage Solutions

Industry · Onshore Wind · Power DSO

C

Skeleton · Estonia

PRODUCT Skeleton Supercapacitors

Next generation supercapacitors for energy storage

THE NEED.

The increasing electrification of a wide range of industries creates a demand for lightweight, cost-effective and powerful energy storage systems. The main industries requiring such solutions are the automotive, transportation, heavy industrial equipment and power grid industries.

THE SOLUTION.

Skeleton's supercapacitors stand out from others of their kind. Patented "curved graphene" holds significant advantages, but there are also major benefits offered by the cells. No other product on the market has as high power and energy density as Skeleton's supercapacitor cells, the building blocks for supercapacitor modules and energy storage systems.

VALUE PROPOSITION.

- High energy density.
- High power density.
- Low internal resistance means high efficiency and less need for cooling.
- Reliability and long lifetime.





suena

Hoheluftchaussee 139
20253 Hamburg
Germany

lennard@suena.energy
www.suena.energy

✓ PILOT

CUSTOMER REFERENCES

TagEnergy, Vattenfall, Orsted,
AboWind, Encavis, FBS-Systems,
MaxSolar

MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Onshore Wind · Solar PV

C

Suena · *Germany*

PRODUCT suena

Autopilot for energy storage

THE NEED.

Flexibility in the power grid is vital to a smooth energy transition. Fluctuating supply and volatile and highly-regulated markets all pose challenges. Efficiency and profitability are crucial factors in increasing adoption of energy storage to support the expansion of renewables.

THE SOLUTION.

The suena energy storage optimisation and trading platform is a revolutionary means to accelerate the energy transition. The solution seamlessly and efficiently integrates various flexible components as well as renewable energy into the grid. Designed to handle the immense complexity of efficient and strategic power trading on multiple markets, the suena Autopilot processes billions of data points, continuously optimises trading strategies, and reacts in real-time to fluctuations in the grid.

VALUE PROPOSITION.

- The fully-automated Autopilot enables multi-market trading on a range of wholesale markets and covers various ancillary services. This reduces risk and increases revenue.
- The software's modular design enables it to adapt swiftly to the diverse requirements of power plants, power markets and regulations in different countries. This flexibility permits the rapid scaling of operations.
- The software uses Digital Twin and AI to locate the best trading strategy available, taking the degradation of energy storage into account.





City Road 128
EC1V 2NX London
United Kingdom
founder@taisan.co.uk
www.taisan.co.uk

✓ **EARLY STAGE**

CUSTOMER REFERENCES

TaiSan is in close discussions with number of Tier 1 automotive and battery OEMs. So far, 19 non-binding MoUs are signed with prospective OEM customers.



MARKET SEGMENTS

Energy Storage Solutions

Battery industry



TaiSan · *United Kingdom*

PRODUCT TaiSan

A novel quasi-solid-state sodium metal battery

THE NEED.

Current sodium-ion batteries have too low an energy density to meet the needs of EVs. Solid-state cells are an option, but need high temperatures to operate, high stacking pressure, complex equipment to scale, and metal anodes have dendrites growth that limits cycle life.

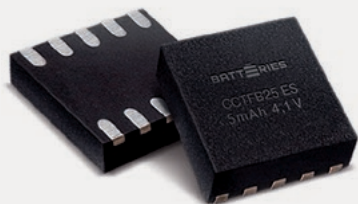
THE SOLUTION.

TaiSan has developed a novel polymer electrolyte and sodium metal anode that boosts battery energy density, while keeping costs low. The IP is in new material design and its process. An ideal interface is generated between electrolyte-electrodes to ensure a high cycle life and utilise existing Li-ion battery production lines to scale.

VALUE PROPOSITION.

- Smaller and lighter battery packs in EVs.
- Reduced costs - maximising benefits and profit margins.
- Enhanced safety, eliminating fire risk.
- Improved LCA metrics by not using lithium, nickel, cobalt and copper metals.





Pl. J. Kilińskiego 2
35-005 Rzeszów, Podkarpackie
Poland

j.blonski@meta-group.com
www.thebatteries.tech

✓ PILOT

CUSTOMER REFERENCES

Several companies and institutions have been approached, incl. Phillips, Arrow Electronics, Aisense, Blinke, Warsaw Institute of Aviation, ER-Elektronik, Ruuvi, Lilium, Neuro Device, Polimaster, PROMWAD, and Regula. Received feedback confirmed high business interest in The Batteries' products.

MARKET SEGMENTS

Energy Storage Solutions

Industry

C

The Batteries · Poland

PRODUCT The Batteries

Thin-film lithium-ion batteries that outperform conventional lithium-ion batteries

THE NEED.

Currently, the demand for batteries is higher than the supply. Conventional lithium-ion battery producers are selling for future production. The Batteries has devised a method to produce thin-film lithium-ion batteries that is over ten times cheaper than competitive technologies.

THE SOLUTION.

With a durability of approx. 500 cycles, conventional lithium-ion batteries are inferior to thin-film lithium-ion batteries, which can achieve an estimated lifetime of 10,000 cycles. Given that, and the above, 10 times cheaper production means that the unit price of The Batteries' batteries would be just 2-3 times higher than conventional lithium-ion batteries. Possible savings can also be made from fewer battery replacements over time.

VALUE PROPOSITION.

- Superior characteristics compared to conventional lithium-ion batteries in almost all technical aspects, which represents real market disruption potential.
- A simple and material-efficient production method, after an intensive R&D phase and a successful lab-scale validation, is now mature enough for a production-scale demonstration.





Rue Charles Berthier 2-4
38000 Grenoble, Isère
France

philippe@verkor.com
www.verkor.com

✓ PILOT

CUSTOMER REFERENCES

Renault Group and Vekor have entered a long-term partnership to supply 12 GWh per year of batteries for electric vehicles. These high-performance, low-carbon batteries will be produced in the future Vekor Gigafactory in Dunkirk, France.

MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Transport & mobility

C

Verkor · France

PRODUCT

Battery-cell manufacturer for southern Europe

Batteries. Now. For the future

THE NEED.

The battery-driven electric vehicle market will expand significantly over the next few years given stricter EU legislation on CO₂/km emissions, lower total cost of ownership of EVs and improved customer experience. In southern Europe, some 100 to 170 GWh of battery cells will be required by 2030.

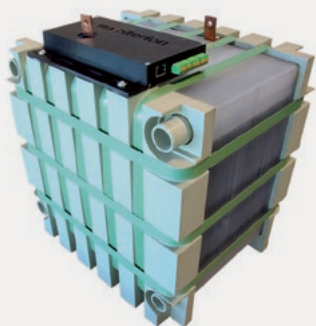
THE SOLUTION.

Founded in July 2020, Vekor is a French industrial company based in Grenoble. The company is accelerating the production of low-carbon batteries in France and Europe to meet the growing demand for electric vehicles, electric mobility in general, and stationary storage in Europe. Vekor will open its fully digital 4.0 pilot line in 2023. A model of excellence, competitiveness and resource efficiency, its innovation will be integrated into the Gigafactory planned for 2024.

VALUE PROPOSITION.

- An attractive business model in terms of agility, sustainability and governance.
- The best talent in the field; a strong, agile team grows to meet new challenges.
- Brings together the best partners to localise the entire value chain in Europe, ensuring optimal use of skills and resources.
- Vekor is supported by EIT InnoEnergy, IDEC Group, Schneider Electric, Capgemini, Renault Group, EQT Ventures, Arkema, Tokai COBEX, Demeter-managed FMET, Sibanye-Stillwater, Plastic Omnium and Bpifrance.





MARKET SEGMENTS

Energy Storage Solutions

C

Volterion · *Germany*

Carlo-Schmid-Allee 3
44263 Dortmund
Germany

keesvandekerck@volterion.com
www.volterion.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Stacks: VisBlue is a trusted, early stage customer that is continuously placing new orders. Several customers in the EU, Japan, Taiwan and Korean market are building systems with Volterion stacks.

Volterion VRFB Systems: a German Utility has bought a first medium VRFB System. Multiple VRFB Systems, varying from one to several modules, have been sold in the EU.

PRODUCT Flow Battery Modules

Scalable, industrial VRFB modules, for kWh to MWh capacity systems

THE NEED.

Storing generated energy is a relatively new capability in the electricity industry. Energy storage solutions will eventually become a ubiquitous component of the electricity grid, yet many players lack in-house expertise.

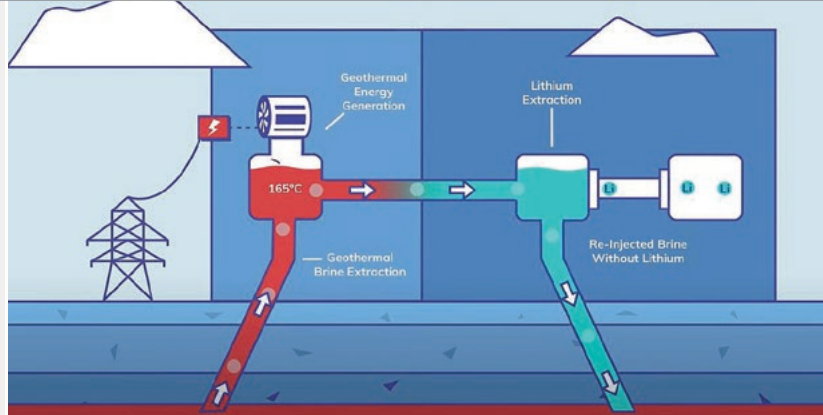
THE SOLUTION.

Compared to other battery technologies (lead-acid, Li-ion, NaS, NaNiCl), the vanadium redox flow battery (VRFB) shows decisive advantages: the battery can be completely discharged and recharged for more than 20.000 cycles. There are no capacity losses, no overheating issues and power and capacity can be scaled independently. It offers complete discharging without any long term consequences. Volterion sells both welded VRFB stacks as complete, modular VRFB systems.

VALUE PROPOSITION.

- High tech performance stacks that last longer and don't leak.
- Industrialised VRFB modules to build a custom-made energy storage system.





MARKET SEGMENTS

Energy Storage Solutions

Battery industry · Transport & mobility

C



Baischstr. 8
76133 Karlsruhe
Germany
hkreuter@v-er.eu
www.v-er.eu

✓ STARTING SALES

CUSTOMER REFERENCES

Available on request

PRODUCT Zero Carbon Lithium

Lithium extraction with a carbon-free footprint

THE NEED.

Lithium extraction harms the soil and causes air contamination. It can also contaminate water sources used by humans and livestock and for crop irrigation. Extraction with a carbon-free footprint is urgently required.

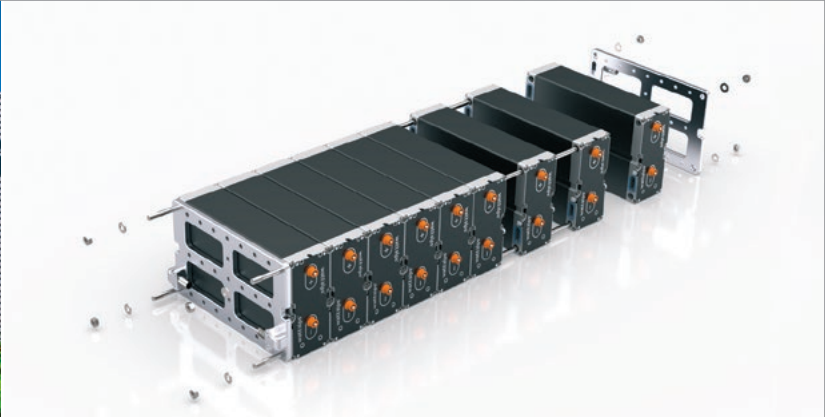
THE SOLUTION.

Backed by a team of world-renowned experts in chemistry, engineering and geology, Vulcan Energie aims to produce the world's first premium, battery-quality lithium chemicals with zero carbon footprint. It does so by harnessing renewable geothermal energy to drive lithium production without using evaporation ponds, mining or fossil fuels.

VALUE PROPOSITION.

- A world-first Zero Carbon Lithium™ business.
- Aims to decarbonise the transition to electric mobility.
- For use in electric vehicle batteries and renewable energy businesses.





wattalps®

Avenue Aldo Eriani 410
38430 Moirans
France

info@wattalps.com
www.wattalps.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Oscaro, Iguana Yachts, Aeonpump

MARKET SEGMENTS

Energy Storage Solutions

Industry · Municipality · Transport & mobility



Wattalps · France

PRODUCT

Advanced Lithium Power Systems

Affordable high performance batteries for the industrial vehicle market

THE NEED.

There is a requirement to replace diesel engines with a battery in the construction, material handling and agricultural equipment markets.

THE SOLUTION.

An innovative and patented thermal management system using immersion cooling to guarantee maximum productivity whatever the climate conditions.

A modular battery system designed for small and medium series vehicles and machines that is cost effective, flexible and fast to implement, requiring just a few weeks of engineering work. Batteries are connected, high energy and have liquid cooling and heating.

VALUE PROPOSITION.

- Full power in all conditions.
- Full range covered by the same technology.
- Full service with a set of tools to optimise life and productivity.
- Last a full day without charging.



<i>Industry</i>		<i>Municipality</i>		<i>Transport & mobility</i>	
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An aerial, high-angle photograph of a dense urban grid, likely a city center. The streets are tightly packed, and the buildings are numerous and tall. A large, semi-transparent blue letter 'D' is overlaid on the right side of the image, partially obscuring the city grid. The lighting suggests it might be late afternoon or early morning, with some buildings showing warm, orange-toned lights.

D

Energy
consumption.
End user



Rue Nicolas 11
L-2176 Luxembourg
Luxembourg
tadashi.kubo@acbiode.com
www.acbiode.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request



MARKET SEGMENTS

Industry

Renewable gas & biofuels

D

AC Biode · Luxembourg

PRODUCT Plastalyst

Green, safe and efficient catalysts that make plastic recycling financially attractive

THE NEED.

According to the UN, only 9 percent of 8.3 billion tons of plastic waste have been recycled over the past 65 years. This is mainly because recycling is not economically feasible.

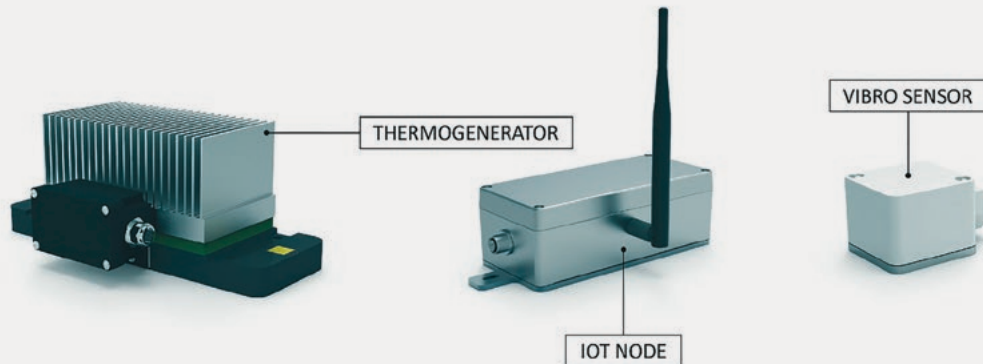
THE SOLUTION.

Plastalyst develops green, safe and efficient catalysts that make plastic recycling financially attractive. The first product for recycling plastic waste on an affordable small scale is already in the prototype phase: it is a state-of-the-art catalyst that depolymerises plastics at low temperatures, drastically reducing costs. Compared to current technologies, Plastalyst requires only 10 percent of the investment and 50 percent of the operating costs.

VALUE PROPOSITION.

- Decomposes plastics efficiently on site, from polymer to monomer, at a lower temperature (below 200°C) and pressure than competitors.
- Unlike current technologies, Plastalyst produces no dioxin, GHG emissions, or tar.
- Catalysts can be sold to chemical or waste management companies or licensing provided of the technology.





Pare Llaurador Street, 169
08224 Terrassa, Barcelona
Spain
david.comellas@aeinnova.com
www.aeinnova.com

✓ STARTING SALES

CUSTOMER REFERENCES

Repsol, Cepsa, ENEL, Bunge, Ferrovial,
TUBACEX, SACYR, CEMEX

MARKET SEGMENTS

Industry

Power DSO · Transport & mobility

D

AEInnova · Spain

PRODUCT InduEye

Wireless long-range edge computing IoT architecture powered by waste heat

THE NEED.

Oil and gas, cement, iron and steel industries are all highly intensive in energy consumption. What's more, up to 65% of this energy is lost in waste heat in the heat conversion process. This increases their CO₂ and greenhouse gas emissions.

THE SOLUTION.

A battery-free internet of things (IoT) device comprised of hardware and software boosting productivity. The wireless, zero-maintenance device is based on a thermal converter and adaptable to any hot surface. It can produce from a few mW to up to 700mW of power generation (50°C – 180°C) and is suitable for different wireless long-range protocols. It has up to 64 sensors: vibration, temperature and ultrasound.

VALUE PROPOSITION.

- Drastically reduces the costs of industrial monitoring.
- Estimated operative life of over 20 years.
- Flexible and plug and play.
- Maintenance free.
- Real time wireless.
- Edge computing IoT device based on a system on a chip (SoC).





Pare Llaurador Street, 169
08224 Terrassa, Barcelona
Spain
david.comellas@aeinnova.com
www.aeinnova.com

✓ PILOT

CUSTOMER REFERENCES

Available on request.

MARKET SEGMENTS

Industry

Power DSO

D

AEInnova · Spain

PRODUCT

HEAT-R Waste Heat Recovering Unit (WHRU)

Renewable energy from industrial waste heat using thermoelectric generators

THE NEED.

Industries are inefficient at using energy. More than 60% is wasted in the form of heat. Reducing the cost of the energy bill and lowering the environmental impact of energy are both essential.

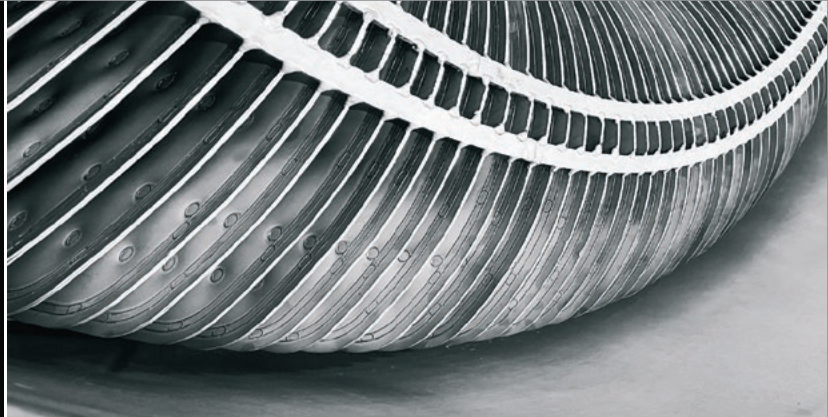
THE SOLUTION.

An initial solution provided is sustainable and eco-friendly energy production using a by-product of the industrial process itself: heat. Converting waste into usable energy reduces energy bills and lessens the environmental impact made in industry, aligning it with the requirements of new environmental rules.

VALUE PROPOSITION.

- Drastically reduces the cost of industrial monitoring.
- Estimated operative life of over 20 years.
- Flexible solution which can be easily installed in every industry.
- Plug and play.
- Scalable, modular and maintenance-free.
- The system can be upgraded with new technologies for higher performance.





ALPINOV X

Rue de la Cuche 176
38113 Veurey-Voroize
France
thomas.vinard@alpinovx.com
www.alpinovx.com

✓ PILOT

CUSTOMER REFERENCES

Engie

MARKET SEGMENTS

Industry

Heating & Cooling · Municipality · Residential Building

D

Alpinov X · France

PRODUCT GEN 4

Energy efficient district and data centre cooling

THE NEED.

The refrigeration industry must reduce its energy consumption and its corresponding CO2 footprint. A major challenge is to enhance energy efficiency while eliminating the use of perfluorinated refrigerants. Only a breakthrough technology can provide a solution.

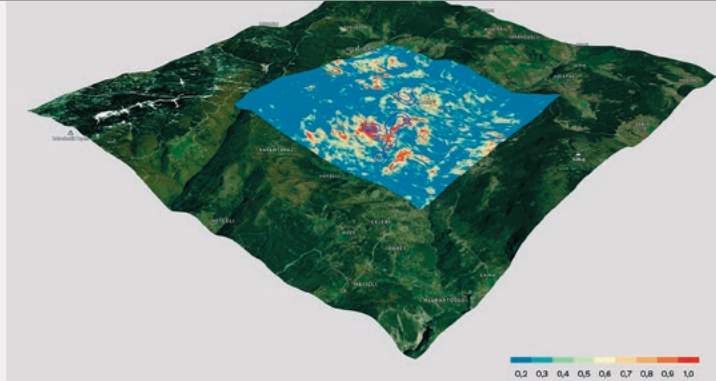
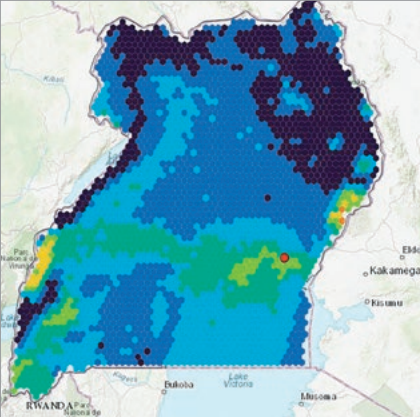
THE SOLUTION.

GEN 4, developed and produced by ALPINOVX, is an innovative 'green' chiller. Highly efficient, it uses no chemicals and emits no greenhouse gases, using water instead as a replacement for synthetic refrigerants. The cutting-edge technology optimises the energy efficiency of industrial cold production and slashes its carbon footprint. This enables data centres and district cooling operators to operate at a reduced capital and operating costs (capex and opex) while preserving the environment.

VALUE PROPOSITION.

- Maximises the energy efficiency of industrial refrigeration production.
- Uses water as a replacement for synthetic refrigerants.
- Eliminates a large part of the carbon footprint linked to the cold industry.
- Offers a consolidated turnover for data centres and district cooling operators.
- Presents the global cold energy industry with the opportunity to transform itself.





Kesklinna linnaosa, Ahtri 12
10151 Tallin, Harju maakond
Estonia

mail@website.com
www.website.com

✓ PILOT

CUSTOMER REFERENCES

Two pilots ongoing:

Prospecting metals and ores in the copper mine in La Escondida area of Chile with BHP.

In a project with Crossroads Energy and Delta Energy in Azdavay (North Central Turkey) - one of the largest CBM (Coal bed methane) deposits discovered.



MARKET SEGMENTS

Industry

Battery industry · Hydrogen & e-fuels · Nuclear

D

Beholder · Estonia

PRODUCT AI for sustainable minerals exploration

Web GIS powered with AI for the exploration of critical minerals

THE NEED.

By 2050, some 3 billion electric vehicles will require trillions of batteries, and the critical minerals market will be worth some 12 trillion dollars. However, exploration of minerals takes 20 times more effort than it did 30 years ago, with only 2% of prospects becoming a mine.

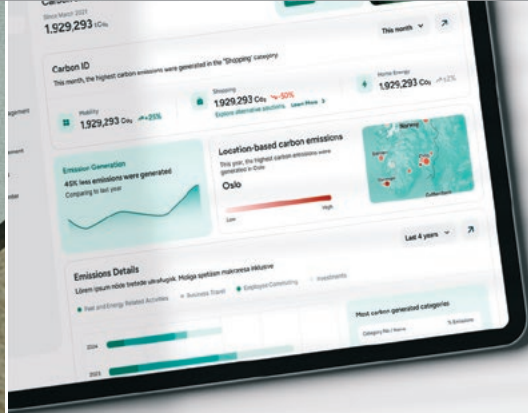
THE SOLUTION.

Beholder has developed an AI for the quick, precise and sustainable exploration of critical mineral deposits, enabling geological research to be upscaled. This state of the art neural network combines 49 data inputs over 200 models to make efficient predictions of mineral deposits with an up to 96% accuracy rate.

VALUE PROPOSITION.

- Mining companies receive access to geological insights with a pricing model based on the size of the project.
 - Investors and banks receive risk clarification and an efficient assessment before a decision is made.
- Prices are based on project schedule and loan duration.





**Carbon
Centrum**

Stangevegen 111 J
2321 Hamar, Hamar
Norway

cagri@carboncentrum.com
www.carboncentrum.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Signed partnership with Dekra. First ever personal CarbonID digital asset.

Signed agreement with Neonomics. Reaching EU open banking platform for transaction category and emission tracking creation.



MARKET SEGMENTS

Industry

D

Carbon Centrum · Norway

PRODUCT Carbon Centrum

Company sustainability targets that align with employees to 'measure, act & reduce'

THE NEED.

With 2030 targets less than 2000 days away, companies urgently need to manage their emissions. However, managing what can't be measured is difficult. Companies need better ways to align with their employees, and create effective internal resources to measure and lower emissions.

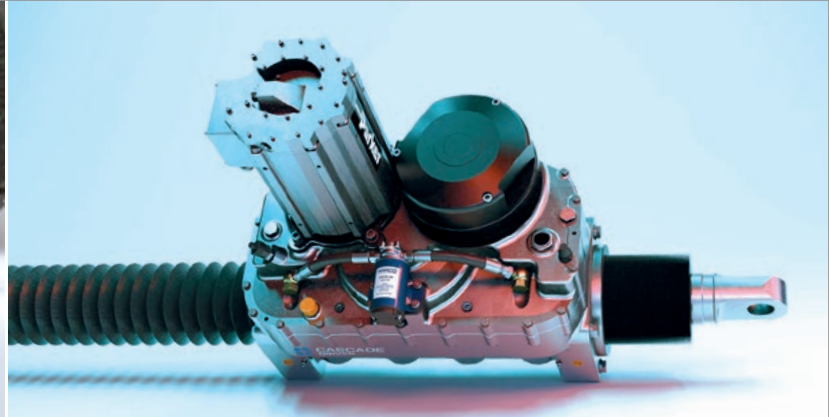
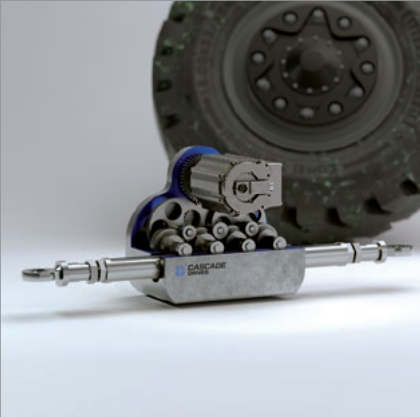
THE SOLUTION.

CarbonID helps companies manage, lower and offset their carbon emissions. The platform works autonomously and in real-time, creating data and reporting on employee emissions. This allows companies to engage their staff in reducing emissions via award schemes and gamification, creating valuable intelligence for the company in return. This people-powered approach is highly effective: just 10% lower emissions can have the same impact in months as years of offset investments.

VALUE PROPOSITION.

- Manages, lowers and offsets carbon emissions.
- Works autonomously and in real-time to create data on emissions.
- Engages employees and even customers.
- Creates valuable intelligence for the company.
- A people-powered approach crucial to meeting targets.





MARKET SEGMENTS

Industry

D

Cascade Drives · *Sweden*

Skolgatan 14
92 70 Sollentuna, Stockholm
Sweden
nick.vestman@cascadedrives.com
www.cascadedrives.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

PRODUCT Electromechanical linear drives

Linear drives to electrify linear motion in heavy machines

THE NEED.

A transition to all-electric solutions for industry equipment is required. Besides, the introduction of autonomous driving in vehicles require electrical steering control. However, there is no substitute for hydraulic cylinders in large and heavy lifting applications or steering application which require higher forces or more accurate control.

THE SOLUTION.

Cascade Drives' electromechanical linear drive utilizes a unique gearbox technology which enables high performance capabilities of high load and high-speed capacity as well as high energy efficiency and accurate control. The high-performance attributes achieved by Cascade Drives technology make it suitable for heavy-duty lifting operations and accurate wheel steering control.

VALUE PROPOSITION.

- Combine both high load capacity and high speed.
- Improve controllability.
- Lower life cycle costs.
- Maximizes the productivity of customer equipment.





MARKET SEGMENTS

Industry

Transport & mobility

D

Catalyco · *Latvia*

Uriekstes street 3
LV-1005 Riga
Latvia

rs@catalyco.eu
www.catalyco.eu

✓ PILOT

CUSTOMER REFERENCES

Advancing through qualification stages with major customers such as Saint-Gobain, Envalior, and Dunlop. First sales of paid samples achieved. Tests conducted with major tire and chemical companies, and letters of intent received from Yokohama, Lanxess (now Envalior), and Höganaäs.

PRODUCT

Catalyco's Sustainable Zinc Oxide - rZnO

A circular economy supply chain for ZnO to help industry meet ESG targets

THE NEED.

Valuable zinc oxide (ZnO) in materials on landfills is wasted due to a complex or costly recovery process. Industry is still dependent on imports for 40% of ZnO. This dependency results in significant risks and financial burdens for the rubber industry and catalyst manufacturers.

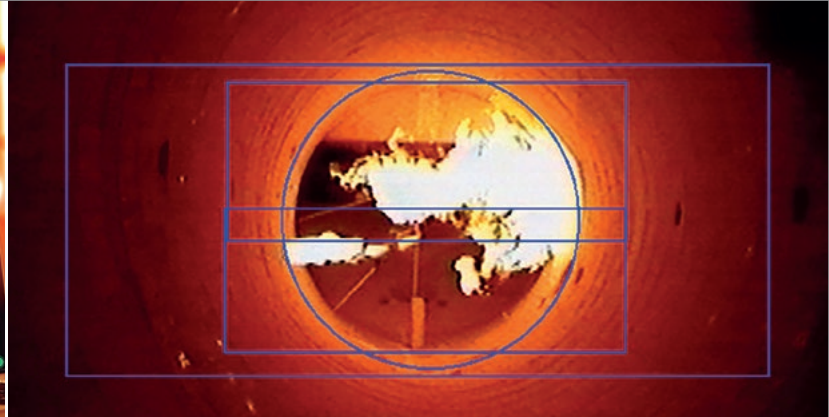
THE SOLUTION.

Catalyco focuses on creating a sustainable and local supply chain for zinc oxide (ZnO), by extracting it from industrial waste streams. The company manufactures advanced ZnO products that have unique characteristics and provide added value in an environmentally friendly way. The potential applications of these products include the tyre and rubber industry, as well as adsorbents and catalysts. Additionally, the high purity of the ZnO makes it suitable for use in the cosmetics sector.

VALUE PROPOSITION.

- A process developed to extract ZnO from industrial waste streams helps to establish a local supply chain.
- The chemical industry can benefit through the promotion of a circular economy and in enabling the reuse of materials, leading to reduced costs and a more secure supply of materials.
- The rubber industry can benefit through reduced consumption and costs, by utilising recovered materials, improving rubber characteristics, and by complying with legislation.





Augartenstraße 1
76137 Karlsruhe
Germany
h.schoenecker@ci-tec.de
www.ci-tec.de

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Industry

D

ci-Tec · *Germany*

PRODUCT Inspect Pro Control

Cement production with reduced CO₂ emissions and fuel costs

THE NEED.

There is a requirement to make cost savings and reduce CO₂ in cement production. While the use of low-rank fuels is a solution, varying fuel compositions require an appropriate process control for the permanent adjustment of burner parameters, since it directly impacts upon product quality.

THE SOLUTION.

Inspect Pro Control (with the use of new camera systems in conjunction with powerful image processing systems) provides a solution with process optimisation taking place through the burner control. It maximises on the usage of alternative fuels by controlling the quality of the product (lime).

VALUE PROPOSITION.

- 10% reduction of CO₂ emissions and fuel costs; ROI in less than 1 year.
- Cement kiln operators will be able to recognise process problems earlier.
- Increased energy output, decreased emissions and stabilised combustion.
- Lower operational costs.





DESCARBONIZE

MARKET SEGMENTS

Industry

D

Descarbonize · *Spain*

P.° Castellana, 18th floor 259
28046 Madrid
Spain

julio@descarbonize.com

www.descarbonize.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

ENGIE, CBT, COMGAS

PRODUCT Descarbonize

Taking control of supply chain emissions

THE NEED.

Global and EU-level market demands and regulation directives task companies with accurate reporting of carbon emissions. However, a large proportion of emissions happen in supply chains (ie. Scope 3), which are hard to measure as they belong to third parties and not the company.

THE SOLUTION.

Descarbonize has developed software as a solution that acts as a white label to allow for suppliers to input, analyse and create carbon emission reduction scenarios. Companies can see what their supplier's impact is, and how much is attributable to them. Both sides can generate scenarios to reduce their impact by identifying hotspots.

VALUE PROPOSITION.

- A dedicated solution for companies' Scope 3 emissions (supply chains).
- SaaS reliability and user friendliness.
- Adapts to multiple organisational boundaries and structures and their entire supply chains.
- Facilitates the reduction of emissions, helping the company and the planet.





Koszykowa 75
00-662 Warsaw
Poland
contact@ecobean.pl
www.ecobean.pl

✓ PILOT

CUSTOMER REFERENCES

Ongoing projects with Żabka, Econt (Biodegradable flower Pots), Starbucks, Delta Coffe and Vattenfall (introduction of closed-loop coffee grounds in the new premises).

MARKET SEGMENTS

Industry

Bioenergy & Waste to energy

D

EcoBean · Poland

PRODUCT EcoBean

Turns coffee waste into sustainable chemicals

THE NEED.

Europe wastes a phenomenal 9000 tons of spent coffee grounds a day. At the same time, more and more resources are demanded to produce food, cosmetics and packaging. This is a burden on the planet and a huge problem for its inhabitants.

THE SOLUTION.

EcoBean turns spent coffee grounds into five fractions of sustainable chemicals: coffee oil, antioxidants, PLA, lignin, and protein additives. These are low-carbon alternatives to those currently-produced chemicals, helping companies reduce the carbon footprint of their final products. EcoBean focuses on sustainable production and high-margin valorisation (8000 euro revenue from each ton of waste). The company is constructing a pioneering biorefinery for comprehensive coffee waste processing.

VALUE PROPOSITION.

- Uses high-quality sustainable chemicals with a low carbon footprint.
- Dramatically reduces waste.
- Reduces GHG emissions both from handling over coffee grounds and use of chemicals.
- A showcase for sustainability reports.
- Builds the company's image as a sustainable brand based on real action.





ecop

MARKET SEGMENTS

Industry

District Heating Grid · Heating & Cooling · Residential Building

D

Ecop · Austria

Lastenstraße 15
4531 Neuhausen an der Krems
Austria
fabian.sacharowitz@ecop.at
www.ecop.at

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

PRODUCT High Temperature Heat Pump

Efficient high temperature heat pump for industrial applications

THE NEED.

Process heat comes at a high cost and there are few sustainable solutions available in the 100-200°C range. There is an urgent need for heat pumps that remain efficient up to and over 200°C, are cost-effective, reliable and do not use fluorinated greenhouse gases (F-gases).

THE SOLUTION.

Ecop has developed a new heat pump that is highly economical and energy efficient. The same appliance has a broad area of application, supplying up to 250°C heat with a temperature lift of up to 120K. It requires no lubrication and all parts are low maintenance, as they are rotating, standard and industrial. The Ecop rotation heat pump can be used simultaneously in one machine to generate heat and cold, and also serves as a flywheel accumulator. No F-gases or flammable refrigerants are used.

VALUE PROPOSITION.

- Capable of attaining 100-250°C heat efficiently over the whole temperature range, with long-term stability and temperature lift of up to 120K. No lubrication needed.
- High energy efficiency when used with significant temperature differences between the inlet and outlet in the heat exchangers, from 15°C to 40°C.
- Practically no risk to the environment in contrast to other technologies (toxic and poisonous working media etc.).





ENERGIENCY
ENERGY INTELLIGENCE FOR MANUFACTURING

MARKET SEGMENTS

Industry

D

Energiency · France

Avenue Jules Maniez 22
35000 Rennes
France

riccardo.mancini@energiency.com
www.energiency.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

140 projects in various market segments (paper, food and beverages, chemistry, mineral and mining, automotive, water...), 3 continents, 25 countries

PRODUCT Energiency

Decarbonising factories by leveraging human and artificial intelligence

THE NEED.

Industrial manufacturers lack energy competitiveness resulting in high energy bills. Although data is widely available, operational teams are unable to find solutions as they do not have the means to conduct key performance indicator (KPI) analysis.

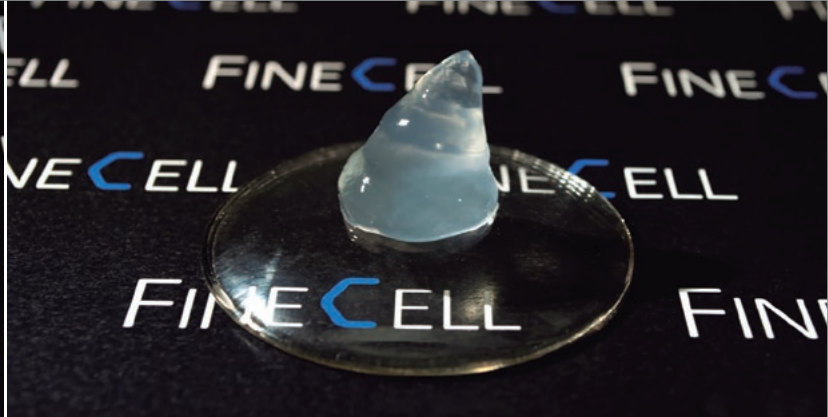
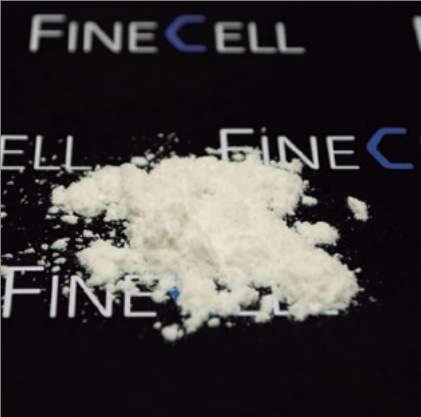
THE SOLUTION.

Energiency is an industry 4.0 technology that supports manufacturers by rapidly detecting and achieving new sustainable energy and CO₂ savings. Energiency leverages existing data in real time through innovative analytics software that combines human and artificial intelligence. Data is available in relation to production, maintenance and weather conditions.

VALUE PROPOSITION.

- Energy and CO₂ savings of up to 15% in under a year.
- Competitive.
- Data available for production, maintenance and weather conditions.





Teknikringen 58
11428 Stockholm
Sweden
peter.axegard@finecell.se
www.finecell.se

✓ PILOT

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Industry

Residential Building

D

FineCell · Sweden

PRODUCT

Cellulose micro-/nanofibers

Cellulose micro-/nanofibers for enhanced product performance and reduced carbon footprint

THE NEED.

Bio-based and bio-degradable high-performance materials are required to enable manufacturers to phase out harmful and fossil-based chemicals and reduce the carbon footprint of their products.

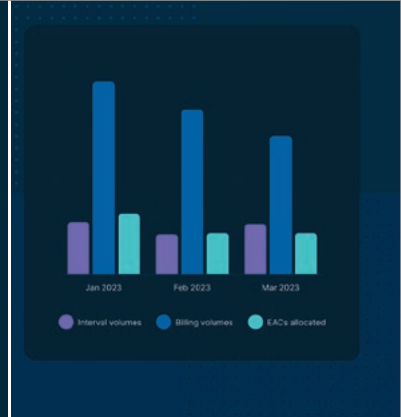
THE SOLUTION.

FineCell has developed sustainable cellulose micro-/nanofibers that can act as reinforcements to help manufacturers make more sustainable products using bio-based raw materials. This solution helps replace fossil and often harmful chemicals with healthy alternatives.

VALUE PROPOSITION.

- The easily-dispersed product saves significant amounts of energy in transportation and use.
- Stabilises emulsions and dispersions.
- Tunes rheological properties of liquid and gel formulations.
- Enables easy spread and spray of thick formulations.
- For personal care: improves moisturising effects, carrier for active ingredients, excellent biocompatibility, film forming, great skin feel, neither greasy nor sticky.
- For paints & coatings: improves mechanical properties (e.g., scratch resistance).
- Other applications: thin films, gas barriers, 3D bio-printing.





MARKET SEGMENTS

Industry

Energy Storage Solutions · Non Residential building



Flexidao · Spain

Pallares 99
08037 Barcelona
Spain
d.terpstra@flexidao.com
www.flexidao.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Iron Mountain.
Google.
Microsoft.
Cellnex.
Vodafone.
Bekaert.
Veolia.

PRODUCT Inventory

Minimises market risk, reduces operational costs and automates CDP and RE100 reporting processes

THE NEED.

Companies struggle to efficiently collect, consolidate and manage credible data on the green energy they purchase. Companies need a comprehensive overview of EAC, PPA and contract performance to identify risks and accurately report to disclosure schemes, such as CDP and RE100.

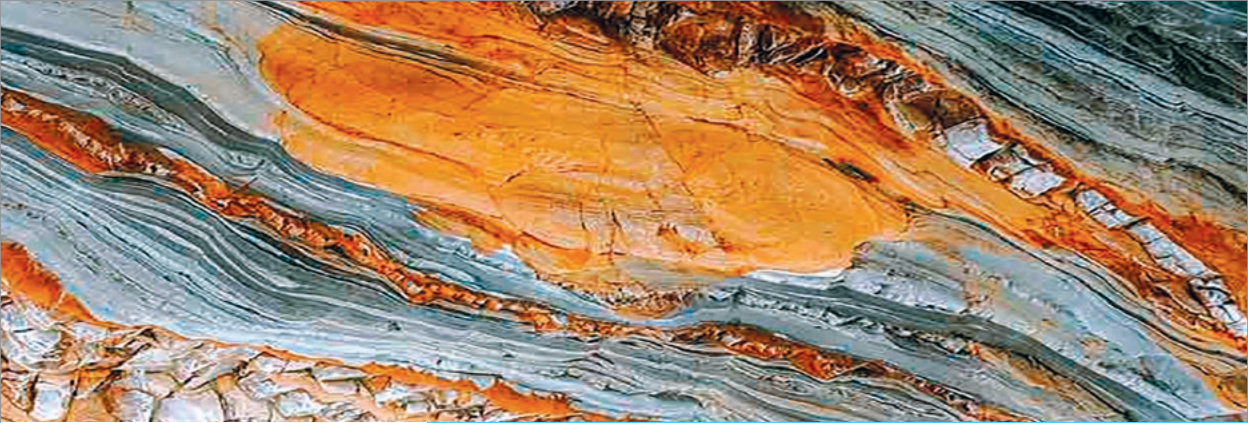
THE SOLUTION.

Flexidao offers an efficient way to view data and analytics on a consumer's renewable energy procurement to achieve better performance. The software collects energy certificates and related emissions, keeping track of where a consumer's energy comes from. All renewable energy contracts are stored in one place, and information can be visualised via the Flexidao software, or automatically fed into a consumer's personal energy or sustainability software.

VALUE PROPOSITION.

- Saves time and costs on data collection.
- Consolidates global energy data and certificates.
- Avoids manual interactions with registries, suppliers, or third parties.
- Simplifies Scope 2 emissions reporting.
- Boosts credibility of green energy reporting.
- Saves auditor costs by streamlining certificate validation.
- Tracks progress towards monthly renewable goals.
- Monitors cost vs. budget for each energy product.





MARKET SEGMENTS

Industry

Energy Storage Solutions · Hydrogen & e-fuels · Municipality

D

Geolinks · France

Rue de Lyon 61
75012 Paris
France
frederic.moinet@geolinkservice.com
www.geolinks-services.com

✓ PILOT

CUSTOMER REFERENCES

(Mining): Anglo American, De Beers, Glencore, SRK

(CCS and Gas storage): Baker Hughes, Geostock, Equinor, Enagaz, Terega, Storengy

(Hydrogen): CVA, 45-8 Energy, Engie New Ventures

(Geothermal): Total Energies, TLS Geothermics, Kalypso

(Water management): Setec

PRODUCT FlowTerra

Innovative, safe and flexible subsurface monitoring

THE NEED.

Energy operators need to enhance the control and surveillance of the subsurface at their industrial sites. They also require an environmentally acceptable monitoring system that is easy to install and flexible.

THE SOLUTION.

A highly-innovative monitoring solution, FlowTerra™ utilises the natural and free-of-charge energy propagating at the subsurface to deliver key subsurface information. It then transforms it into a service encompassing three functions: diagnosis, monitoring and data enhancement. A primary objective is to improve preventive maintenance systems, shifting from reactive to proactive approaches. Implemented for the long term, FlowTerra provides essential early warning capabilities.

VALUE PROPOSITION.

- Efficiently monitors and detects fluid movements in the subsurface.
- Improves preventive maintenance systems, shifting from reactive to proactive approaches.
- Implemented for the long term, providing early warning capabilities.
- Helps secure operations and discovery of sustainable, non-carbon resources, such as natural hydrogen.





≡ Graphmatech

Mältargatan 17
753 18 Uppsala
Sweden

mamoun.taher@graphmatech.com
www.graphmatech.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

ABB, Eriksson, Sandvik, Konsberg
Automotive, National, Gränges,
Huber+Suner



MARKET SEGMENTS

Industry

Battery industry · Energy Storage Solutions · Offshore Wind

D

Graphmatech · Sweden

PRODUCT Aros Graphene®

Graphene-based nanocomposites for enhanced energy efficiency and product performance

THE NEED.

More than 50% of all electronic failures are due to poor thermal management. Furthermore, around 33% of energy losses in cars are due to friction. Materials that combine high electrical/thermal conductivity with self-cooling and low friction are needed.

THE SOLUTION.

GraphMaTech has developed graphene-based nanocomposites for many different applications, including thermal management, moving electrical contacts and tribology, energy storage and self-lubricating systems. The nanocomposites design make graphene technology easy to use in industrial applications.

VALUE PROPOSITION.

- World record thermal conductivity.
- Cost-effective and environmentally-friendly manufacturing.
- Easy to use for the industry, even 3D-printable.
- Low friction, electrical conductivity, hardness, corrosion barrier properties.





MARKET SEGMENTS

Industry

D

Gravithy · France

Les Docks Atrium 10.26
Place de la Joliette 10
13002 Marseille
France

contact@gravithy.eu
www.gravithy.eu

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request

PRODUCT Gravithy

A sustainable iron company

THE NEED.

Steel is a strategic material in the transition to a low-carbon economy. However, the coal used for its production is responsible for over 7% of global CO₂ emissions. Decarbonising the steel value chain is essential to achieving a C-neutral society. It can only be done by rethinking iron production.

THE SOLUTION.

Gravithy plans to create a low-CO₂ iron plant and to replicate its model outside France. Using hydrogen to react with iron ore avoids the high CO₂ emissions of traditional methods. The product is direct reduced iron (DRI), which can be used as feedstock for low-CO₂ steel production or can be traded in the form of hot briquetted iron (HBI). By decarbonising steel production, Gravithy supports the EU's pledge of carbon neutrality and responds to a growing demand for low-CO₂ steel products.

VALUE PROPOSITION.

- Brings together the commitment and competencies of best-in-class, purpose-led stakeholders to redefine the way iron and steel are produced and sold worldwide.
- Unites experienced professionals while attracting and forging young talents.
- Plant designed with best available technologies.
- Profitable business model based on cost competitiveness.
- Excellence in a superior product line.
- Works in close collaboration with players representing the entire value chain.





H2green steel

MARKET SEGMENTS

Industry

D

H2 Green Steel · Sweden

Riddargatan 23 A, 1 tr.
114 57 Stockholm
Sweden

sales@h2greensteel.com
www.h2greensteel.com

✓ EARLY STAGE

CUSTOMER REFERENCES

Available on request

PRODUCT H2 Green Steel

Accelerating the decarbonisation of steel production

THE NEED.

Steel production accounts for 25% of Europe's industrial CO₂ emissions. This amounts to more than the Nordics' total CO₂ emissions, and more than that caused by all flights departing from the EU. Decarbonisation is a must for the industry, and disruptive technology will be a key enabler.

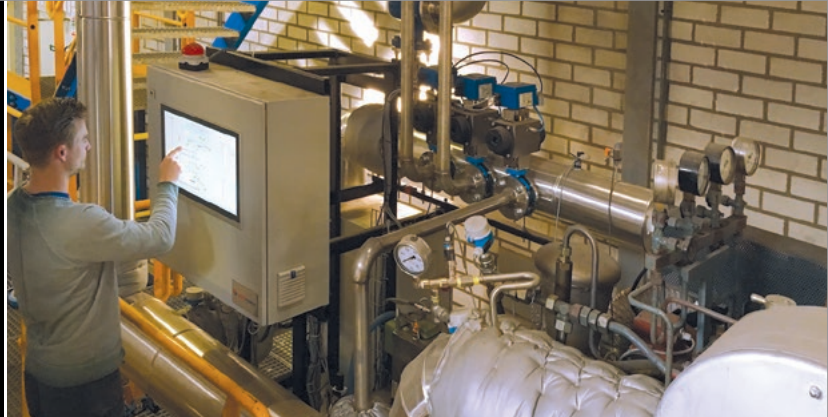
THE SOLUTION.

H2 Green Steel plans to build a fully integrated, digitalised and automated greenfield steel plant. In bringing together raw materials, renewable energy, leading expertise and artificial intelligence, the aim is to bring emissions down to zero. It will be the first large-scale production site for fossil-free steel in collaboration with customers across multiple segments, including automotive, commercial vehicle, white goods, furniture and industrial equipment.

VALUE PROPOSITION.

- The latest technology is used every step of the way in a fully integrated large-scale production line for fossil-free steel production.
- A business model focused on a value chain approach: as the off-takers are already included, this provides an acceptable premium on the decarbonised end product produced of green steel.





Saxofoonstraat 8
5702 KC Helmond
The Netherlands
henk@heatpower.nl
www.heatpower.nl

✓ STARTING SALES

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Industry

D

Heat Power · The Netherlands

PRODUCT Heat Power

Supercharged steam turbine systems for industrial heat and power

THE NEED.

The competitiveness and environmental impact of heat intensive industrial processes can be much improved by reducing the use of energy.

THE SOLUTION.

A turbine capable of providing heat and power for industrial processes at a significantly reduced fuel cost and with minimum CO₂ emissions. The system is capable of providing both steam and power at fast response times. Its multi fuel capability can be applied to waste streams, enabling manufacturers to achieve higher resource utilisation, reduced cost of energy and green manufacturing. It acts as an add-on to boiler and furnace systems, has components with a track-record and is modular.

VALUE PROPOSITION.

- CO₂ emission reduction.
- Flexible decentralised energy supply.
- Multi fuel and crude biomass furnace compatibility.
- Power output boost of a steam cycle by 20%.
- Rapid response time (seconds) for peak shaving.
- Rigid industrial structure.





heliac

MARKET SEGMENTS

Industry

District Heating Grid · Energy Storage Solutions

D

Heliac · Denmark

Teglbuen 10
2990 Nivå, Copenhagen
Denmark

jf@heliac.dk
www.heliac.dk

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

EON & Norfors (utility companies)

PRODUCT

Heliac solar collectors and thermal energy storage

CO₂-free heat for industries and district heating that is cheaper than fossil fuels

THE NEED.

There is currently no economical CO₂-free heat available for temperatures of over 80°C to 100°C that addresses >25 percent of all CO₂ emissions. Low cost, efficient and uncomplicated solutions must be found.

THE SOLUTION.

Heliac's delivers CO₂-free heat to industries and district heating systems. Concentrating solar collectors produce sustainable heat at a cost below that of fossil fuels; RockStore thermal energy storage enables low-cost, flexible large-scale energy storage offering both heat generation and power generation on demand. By providing clean energy solutions that address a third of all energy consumption, Heliac enables the transition to renewable heat, reduced carbon emissions and lower energy costs.

VALUE PROPOSITION.

- Concentrating solar collectors:
- Flexible and versatile (can change the temperature as needed).
- Follows the sun to maximise output the entire day (+20-40%).
- Standardised design.
- Up to 95% can be locally produced and recycled.
- RockStore thermal energy storage:
- Simple design resulting in low costs.
- Highly scalable.
- Using readily-available materials.
- Low skill requirements for operation and maintenance.





MARKET SEGMENTS

Industry

Municipality · Non Residential building · Off Grid

D

Instagrid · Germany

Hermann-Hagenmeyer-Strasse 1,
71636 Ludwigsburg
Germany

steffen.becker@instagrid.co
www.instagrid.co

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Festool (private label product SYS
Power Station); Hilti (white label
product B230); Strabag; Skanska;
Zeppelin; Hymer

PRODUCT instagrid ONE

Portable power for professionals

THE NEED.

Professionals need a reliable mobile power supply, e.g. craftsmen, who need to operate large machinery on construction sites. The only available solution today is in the form of generators, which are noisy, heavy, emit toxic fumes and have high operational costs.

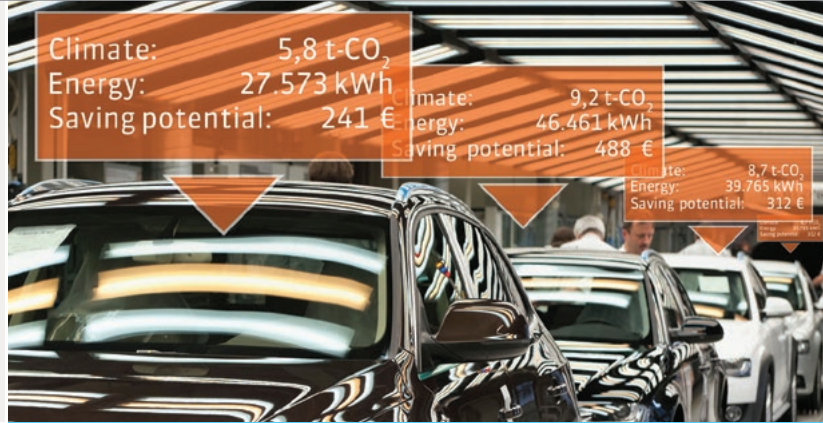
THE SOLUTION.

The instagrid portable power supply has grid-like power, creating mobile workplaces where any large machinery can be powered. It is portable, can be carried with one hand and powers most jobs for an entire workday. instagrid ONE is also the most sustainable choice, built with recycled materials it has no local emissions and is designed for components to be easily recycled at their end of life.

VALUE PROPOSITION.

- Increased productivity
(cuts down installation and operation time by 400h per year).
- Cuts down operational costs
(saves more than €500 on fuel cost per year).
- No local emissions (silent, no exhaust)
with 85% lower emissions over lifecycle.
- Reduces hazard level for workers
(toxic fumes, noise, tripping on cables).
- Increases reliability and availability
(no servicing necessary).





iPoint

Ludwig Erhardstr. 58
72760 Reutlingen
Germany
contact@ipoint-systems.com
www.ipoint-systems.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Industry

Non Residential building · Residential Building

D

iPoint · *Germany*

PRODUCT Live LCA

A cloud-based software tool for LCA and MFCA, using real (live) data to automat the reports

THE NEED.

Climate change causes risks to economies. Stakeholders and investors increasingly demand sustainability in business models, processes and products before investing. Companies need simple software to transform their data into reports or declarations.

THE SOLUTION.

A cloud-based combination of life-cycle assessment (LCA) software and material flow cost accounting (MFCA) helps companies access sustainability information. Live data replaces generic data. Efficiency and risk assessment, internal collaboration, communication and product development are improved. A tool for sustainability and product managers as well as designers.

VALUE PROPOSITION.

- Combines product and production perspective.
- Cost savings by reducing energy and material use.
- Cost transparency.
- Develops a sustainability strategy.
- Environmental Product Declaration (EPD) costs go down to 10%.
- LCA driving innovation and profit.





LIGNEASY

MARKET SEGMENTS

Industry

Battery industry · Non Residential building · Residential building

D

Ligneasy · Finland

Eteläesplanadi 22 B 4th floor
00130 Helsinki
Finland

juho-matti.karpale@ligneasy.fi
www.ligneasy.fi

✓ PILOT

CUSTOMER REFERENCES

Available on request

PRODUCT LignEasy

Unlocking lignin on a large scale from kraft pulp mills

THE NEED.

Current lignin separation systems disrupt a pulp mill's chemical balance and increase the discharge of harmful sulphate into the environment. Plywood glue producers suffer from lack of renewable feedstocks (lignin) to replace fossil-based phenol.

THE SOLUTION.

A novel sulphuric acid-free lignin extraction technology that produces high-value lignin and reduces a kraft pulp mill's emissions. The lignin is a bio-based raw material that can be used in packaging and the chemical industry. The odourless liquid concentrate or dried powder is ideal for drop-in use cases or chemical modification. Formulations are offered for using lignin as a sustainable raw material to address the demand for enhanced performance while replacing fossil-based raw materials.

VALUE PROPOSITION.

- No need to burn lignin.
- A novel lignin extraction technology designed for pulp mills.
- Affordable production of lignin for packaging and the chemical industry.
- Formulations for using lignin as a key sustainable raw material to enhance performance and replace fossil-based raw materials.





Stenhuggarvagen 1
13238 Saltsjö-Boo, Stockholm
Sweden

christian@maqab.com
www.maqab.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Industry

D

MAQ · Sweden

PRODUCT Self-Tuning Mass Damper

Energy saving cutting tools

THE NEED.

By reducing the vibrations in a metal cutting process significant energy savings can be made. The machine can complete its work in a shorter time and in many cases a secondary operation can be avoided thanks to the superior surface finish achieved.

THE SOLUTION.

MAQ's innovative technology simplifies machining by eliminating costly vibration. Offering a high level of reliability and using standard clamping, it is a self-adjustable, low cost plug and play solution that removes vibrations in a wide frequency range.

VALUE PROPOSITION.

- Energy saving cutting tools.
- Increased productivity and less machine time.
- Extended lifetime of insert by x10.
- No need for tuning.
- Reduce scrap metal.
- Reduced operating expenses.





MARKET SEGMENTS

Industry

D

NitroCapt · Sweden

Enköpingsvägen 29
74960 Örsundsbro, Uppsala län
Sweden

gustaf.forsberg@nitrocapt.com
www.nitrocapt.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Strategic partnership with the
Swedish agricultural cooperative
Lantmännen

PRODUCT Sunifix

Fossil-free Nitrogen Fertilisers

THE NEED.

Key nitrogen compounds for industry are currently produced through the Haber Bosch process. This process requires a lot of energy from fossil raw materials and it is responsible for approximately 2% of global greenhouse gas emissions.

THE SOLUTION.

Sunifix is a fossil-free and energy efficient technology for the fixation of nitrogen from the air for industrial and agricultural purposes. The process can operate from intermittent renewable energy sources. It is applicable on a large as well as on a small distributed production scale.

VALUE PROPOSITION.

- The process offers the production of key nitrogen compounds with modest process investments and at an attractive energy cost.
- Responds to societal needs to cope with climate change by offering an emission-free process with only air as raw material.





NORDIC
SEAFARM

MARKET SEGMENTS

Industry

D

Nordic SeaFarm · *Sweden*

Masthammsgatan 3
41329 Gothenburg
Sweden

simon@nordicseafarm.com
www.nordicseafarm.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Leroy Seafood Group

PRODUCT

Nordic SeaFarm

Ocean-grown seaweed on scale in the ocean to decarbonise supply chains

THE NEED.

EU emissions need to be cut by at least 55% by 2030 and supply chains decarbonised. Europe's oceans are underutilised in producing raw materials for bioplastics, energy and food. Seaweed is a regenerative biomass with an ultra-low climate footprint that can play a vital role in this transformation.

THE SOLUTION.

Through proprietary R&D, Nordic SeaFarm has unlocked the ability to grow sustainable biomass (seaweed) on massive scale in the ocean. Seaweed is a functional crop with an ultra-low climate footprint. It has the potential to play a vital role in decarbonising industries and transforming future applications. It contains structural fibres and nutrition, and can help substitute fossil-based raw materials in future material applications, e.g. bioplastics, coatings and packaging solutions.

VALUE PROPOSITION.

Seaweed is processed into valuable sub-products such as:

- Materials: Granulates and formulations to be used within packaging, and bioplastics.
- Food: Sustainable ingredient to add nutrition and taste.
- Plant care: Organic source of nitrogen and phosphorous used in regenerative farming practices and enhance plant yield.





Five Drones

- » Robust and energy efficient
- » Electric
- » 30 kg capacity each



Fully Automated Control

- » Autonomous Swarm control
- » Built in planning and flight safety
- » Patent pending



Vehicle Mounted Base Station

- » Adapted for standard chassis
- » Drones and material storage
- » Modular design



MARKET SEGMENTS

Industry

Bioenergy & waste to energy · Transport & mobility

D

Nordluft · Sweden

Torsgatan, plan 8 11
11123 Stockholm, Stockholm,
Sweden

elof.winroth@nordluft.se
www.nordluft.se

✓ **EARLY STAGE**

CUSTOMER REFERENCES

A range of high profile nordic forestry and bio energy companies have shown interest in the forest fertilisation and ash recirculation applications. Demonstration projects planned in collaboration with universities in Sweden and Canada. Funding of a demonstration project secured from Sweden's Energiforsk, SLU and Energimyndigheten.

PRODUCT

High capacity drone-based spreading system

Efficient and high precision spreading in forestry and agriculture

THE NEED.

Forestry and agriculture currently use inefficient and expensive spreading activities for forest fertilisation, bio ash recirculation, seeding, and pesticide spraying. Methods currently employed are tractors, forest machines and helicopters.

THE SOLUTION.

Nordluft's system is an alternative that offers cost-efficient flexible high precision spreading. A swarm of collaborating heavy lift electric multicopters together with smart software and a vehicle base station for a smooth and efficient integrated logistic solution.

VALUE PROPOSITION.

- Low cost, resource efficient, highly flexible aerial spreading of material in a range of applications.
- Lower CO₂ emissions compared to current spreading methods.
- High-precision, cost-efficient spreading where applicable.





MARKET SEGMENTS

Industry

Municipality · Power TSO

D

OmegaLambdaTec · Germany

Parking 6
85748 Garching, Bavaria
Germany
manuela.pehle@olt-dss.com
www.omegalambdatec.com

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Schleswig-Holstein Netz;
DB Netz; Siemens

PRODUCT

Aut. Cable Monitoring for Anomaly Detection & PM

Automated cable monitoring for anomaly detection and predictive maintenance

THE NEED.

Cable degradation is a major problem for a large number of industries and utilities, including energy providers, mobility infrastructure operators and advanced technology industries. A constant monitoring of cable status is important to allow for predictive maintenance of the system.

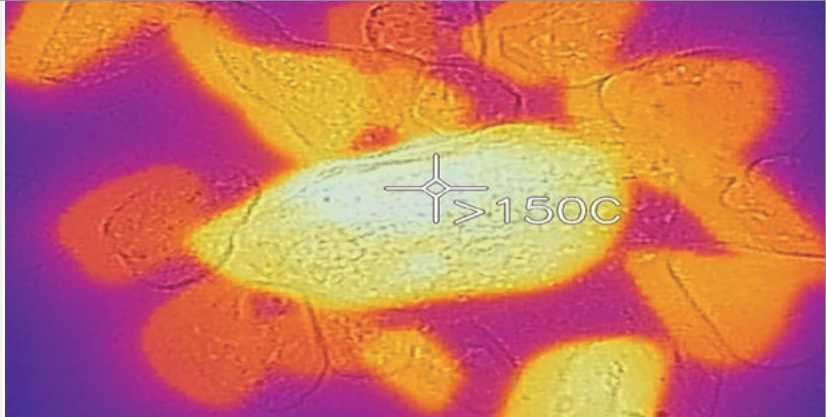
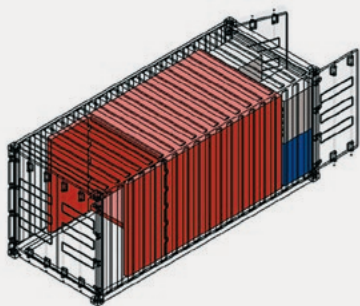
THE SOLUTION.

OmegaLambdaTec provides a multi-technique solution for cable monitoring and predictive maintenance. We make use of state-of-the-art hardware combined with signal analysis and statistic techniques to detect, locate and characterise anomalies along a wide range of cable types. Detected anomalies are then used to do predictive maintenance of the system and to trigger alarms before the severity of the problem becomes critical, thus allowing the continuation of operations.

VALUE PROPOSITION.

- Continuous monitoring of the cable status with the appropriate technique.
- Early detection, localisation and characterisation of the anomalies.
- Alarm trigger and automatic notification to the operator.
- Predictive maintenance allowing for early substitution of defect components before major issues arise.
- Significant loss reduction thanks to continuation of operations.
- End customer satisfaction thanks to service quality.





MARKET SEGMENTS

Industry

D

Percyrocc · Sweden

Green Innovation Park
Ulls väg 29C
756 51 Uppsala
Sweden

dragos@percyrocc.com
www.percyrocc.se

✓ PILOT

CUSTOMER REFERENCES

Available on request

PRODUCT Focused microwave power

Smartly focused microwave power for material processing

THE NEED.

A solution is required to make the microwave-based technology transition from Industry 3.0 to Industry 4.0, driven by intelligent and adaptive systems and integrating hardware, software and data.

THE SOLUTION.

A high power transistor-based microwave material processing technology platform, driven by machine learning algorithms. Applications can be found in the extractive, processing and mining industries.

VALUE PROPOSITION.

- Facilitates Industry 4.0 transition/adoption in industrial microwave material processing applications.
- Future-proof industrial equipment during technology transition.
- Intelligent and adaptive hardware, software and data offering for industrial microwave material processing applications.





Polytopoly.com

Avenue du Champ de Mars 1
45100 Orléans
France

contact@polytopoly.com
www.polytopoly.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Industry

D

Poly to Poly · France

PRODUCT Polytopoly.com

An online platform that sources and analyses recycled polymers

THE NEED.

The purchase of the right recycled polymers is extremely challenging due to the large number of recyclers. Data is either too heterogeneous, insufficient quality or simply unavailable. There are few places where homogenised data is published.

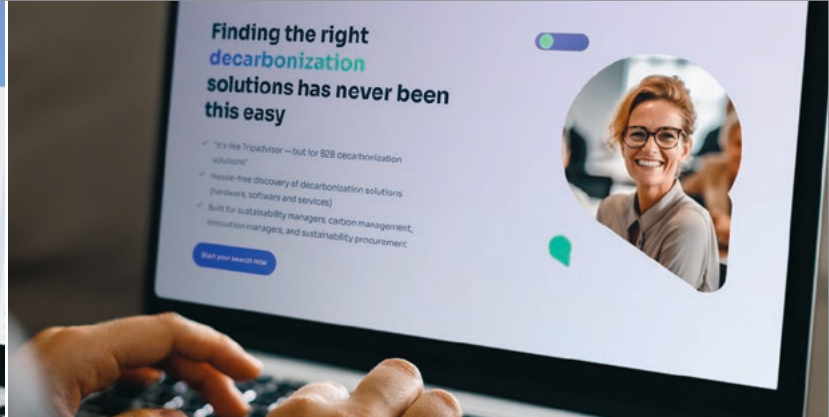
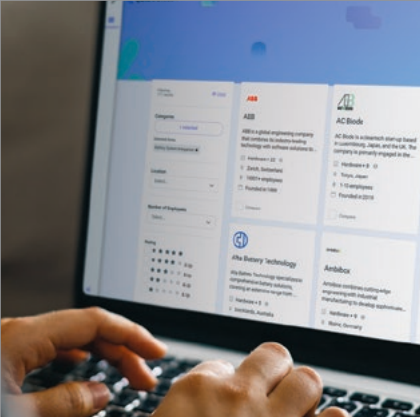
THE SOLUTION.

Through precise and homogenised processes of collecting data, Poly to Poly gives access to a new generation of information and shapes the digital passport for polymers. This is critical for the market fluidity of the recycled polymers. This innovation will boost the circular economy of polymers and energy savings in the field of chemicals production.

VALUE PROPOSITION.

- A circular economy.
- A digitised service.





QURATOR.COM
Decarbonization Ecosystem

Franzégatan 34
112 16 Stockholm
Sweden
cristian.citu@qurator.com
www.qurator.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Industry

Battery industry · Energy Storage Solutions · Heating & Cooling

D

Qurator · Sweden

PRODUCT Qurator

Scouting platform for B2B decarbonisation technologies and services

THE NEED.

Large organisations struggle to find decarbonisation solutions due to reliance on outdated methods like trade fairs, lack of market understanding of new technologies, and limited vendor information. This hinders vendor discovery and the ability of new technologies to gain commercial traction.

THE SOLUTION.

Qurator aims to help organisations of all sizes speed up their transition to net zero by allowing them to identify suitable decarbonisation partners quickly, accurately and cheaply. It does this in two main ways: by offering an open business directory and scouting platform that specialises in decarbonisation tech and services, and by offering a scouting service that helps organisations with more complex needs quickly shortlist potential partners.

VALUE PROPOSITION.

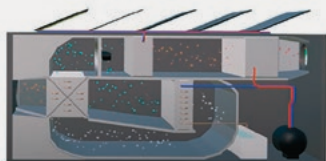
Benefits for buyers:

- Detailed and proprietary categorisation for each industry.
- Tailored shortlisting services for buyers with specific needs.
- Spotlight on emerging technology.
- More than 1400 vendors (hardware, software, and services) and growing fast.

Benefit for vendors:

- Credible 3rd party: all companies listed are screened by the team.
- Be seen and evaluated by active buyers.
- Tech and service focus: 1st of its kind.
- Technology readiness level 5+ focus.
- Carbon credits excluded for clarity.
- Diligent review-verification process.





MARKET SEGMENTS

Industry

Heating & Cooling

D

Samster · Sweden

Faktorvägen 12
434 37 Kungsbacka
Sweden

oscar.skogsen@samster.se
www.samster.se

✓ PILOT

CUSTOMER REFERENCES

Brålanda farming, Upcyclr and
Librixx.

PRODUCT Dryer

Heat pump centric dryer

THE NEED.

Standard drying processes consume significant power and energy, and are fossil fuel driven. To date, solar power has proved an inefficient substitute. A vastly better process is required that has a wider range of applications.

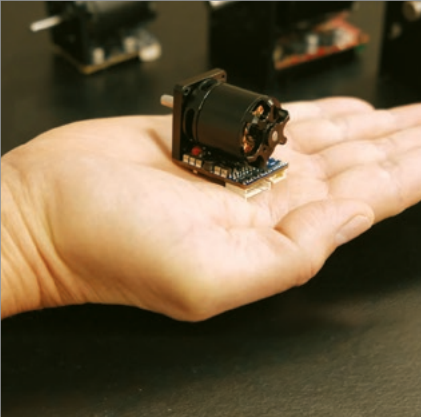
THE SOLUTION.

An innovative process with a huge range of applications brings together several proven energy reducing techniques. Cold hybrid solar panels, a heat pump with a double function, heat exchangers and energy and power optimisation combine in an easy to apply and easy to maintain process, which is safer and more gentle; lower temperatures and less cooling is required, and the process additionally harvests water that can be put to use helping new seeds grow.

VALUE PROPOSITION.

- Reduced drying time.
- Reduced energy consumption by up to 90% when solar power at its maximum output.
- Low fire risk, low fungus risk.
- Cyclical heating and cooling that optionally reduces drying time.
- The potential to eliminate CO₂ emissions.





MARKET SEGMENTS

Industry

Transport & mobility

D

Simplex Motion · Sweden

Banehagsleden 2
414 51 Gothenburg
Sweden
magnus.hildingsson@
simplexmotion.com
www.simplexmotion.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

AD Motion, Sweden Mr Fredrik
Olofsson +46 70 8867719

PRODUCT Integrated compact servomotors

Half the weight and size, and double the torque

THE NEED.

As society shifts towards more sustainable living a given part of the transformation is electrification and an increasingly large demand for electric motors. Industry has adapted to Industry 4.0 and is now heading towards Industry 5.0. Functions and movements need to be smarter.

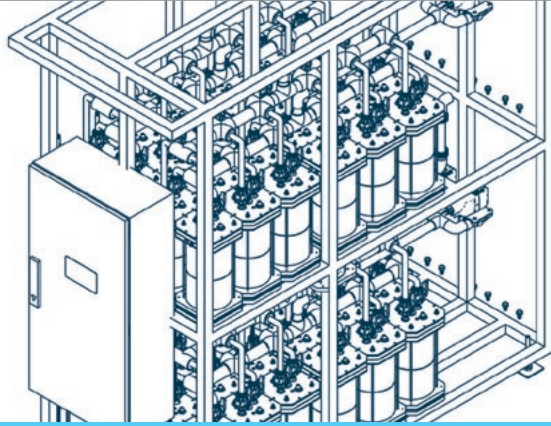
THE SOLUTION.

A smart integrated servomotor that offers powerful motion control with a high power density (relative to weight and size) compared to other motors. The integrated drive, control and encoder make it highly energy efficient. It is cost effective and sustainable, and offers an innovative alternative with enhanced reliability. Motors can be delivered with gearboxes and/or brakes as a motor drive unit, and accessories are available, such as communication boards, Wi-Fi and Bluetooth boards and cables.

VALUE PROPOSITION.

- High power density (half weight and size - double torque).
- Made in Sweden, EU.
- High quality.
- Easy to use and integrate.
- Reliability.
- Energy efficient.
- All in one solution.





MARKET SEGMENTS

Industry

Heating & Cooling · Non Residential building · Off Grid

D

Stockholm Water · Sweden

Stockholmsvägen 116B
187 30 Täby, Stockholm
Sweden

info@stockholmwater.com
www.stockholmwater.com

✓ STARTING SALES

CUSTOMER REFERENCES

SKF VestaSi

Date Sold: June 2023, Sweden.

Application: De-hardening of water for humidifiers in manufacturing plant.

ROI: 24 months.

AmpliAqua. Date Sold: April 2024,

Portugal. Application: Removal and concentration of nutrients in

Aquaculture water. ROI: 36 months.

VEOLIA .Date Sold: Dec 2023, France.

Application: Tertiary treatment of municipal wastewater for Nutrients and Pesticides. ROI: NA (Industrial Pilot unit)

PRODUCT Fors & Ström

Smart, sustainable and customised water solutions

THE NEED.

Water is vital for consumer and industry. Without water, there is no social or economic development. Through its patented CAP3D solution, tailored to meet the evolving industry and consumer water needs, SWT is re-thinking water treatment and transforming it into a smart and sustainable industry.

THE SOLUTION.

SWT's patented water treatment solutions are based on electro-capacitive technology (CAP3D) and have a membrane free and low chemical use product architecture. SWT's CAP3D removes a wide array of contaminants, is highly modular and scalable, and can be tailored to meet customer needs (water quality) in industrial, municipal and consumer applications.

VALUE PROPOSITION.

- Recovery and reuse of resources from water and wastewater.
- Chemical free and highly adaptable and smart water treatment solution.
- Tailorable water quality - for application specific use.
- Enables fully circular water treatment solutions with potential creation of additional and/or increased revenue sources.
- Combined hardware and software solution with big data and IoT facilitated water treatment.





SURF
CLEANER

MARKET SEGMENTS

Industry

Municipality

D

SurfCleaner · *Sweden*

Karlsbodavägen 39
168 67 Stockholm
Sweden

mikael.andersson@surfcleaner.com
www.surfcleaner.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Sonatrach refinery in Italy, Exxon
Mobil, Ports of Stockholm, Swedish
Coastguards

PRODUCT SurfCleaner

SurfCleaner removes, separates
and recovers all floating
pollutants from water surfaces

THE NEED.

Human society and industries generate immense amounts of pollution and waste that end up in nature and in the oceans. Clean water is becoming scarce and greenhouse gases need to be reduced, demanding highly efficient methods for cleaning polluted water urgently.

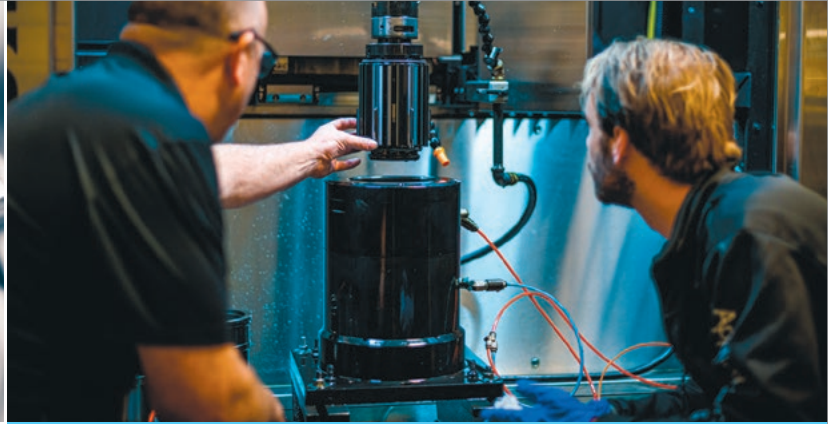
THE SOLUTION.

SurfCleaner designs, develops and manufactures the world's first skimmer separator hybrids for 100 percent removal, separation and recovery of contaminants floating on the water surface – oil, diesel, petrol, plastics, sludge, debris, microplastics, algae and more. The separation process is patented and energy efficient, improving the quality of the water and reducing greenhouse gas emissions considerably. The product can be powered by solar cells, batteries or via grid connection.

VALUE PROPOSITION.

- Automatic and continuous unmanned operation.
- Collects and separates multiple types of floating pollution.
- Very low water content in the recovered pollution – can be re-used.
- Energy efficient – off-grid operation possible.
- Low lifecycle cost due to minimal service and maintenance needs, including over long operation times.
- Very easy installation and deployment.





Knivstogatan 12
75323 Uppsala
Sweden
sales@tribonex.com
www.tribonex.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Name of customer: Leading Automotive Car OEM
Date of sale: June 2024
Object of sale: License for gear treatment for super sportscars
Benefit for the customer: More than double gear lifetime.

Name of customer: Leading Aerospace customer
Date of sale: May 2024
Country of sales: Sweden
Object of sale: Surface treated CV-joints
Benefit for the customer: Precision steering of equipment



MARKET SEGMENTS

Industry

Hydrogen & e-fuels · Offshore Wind · Transport & mobility

D

Tribonex · Sweden

PRODUCT Triboconditioning

Cost-efficient and scalable surface treatments for minimised friction and wear in various industrial applications

THE NEED.

More than 20% of all energy used globally is lost due to friction and wear in various applications, including vehicle transmissions, bearings, pumps, compressors etc. Friction results in energy losses, while wear limits the lifespan of vehicles, machines and equipment which then need replacing.

THE SOLUTION.

A patented mechano-chemical process creates durable low friction surfaces on components. The process is flexible and cost-efficient as it can be implemented using standard production machines, allowing for scalability and seamless integration in existing production lines. The process can replace current polishing steps, adding performance at low cost. The treatment can be applied on components made of steel or cast iron and of various shape and size, thus having very broad applicability.

VALUE PROPOSITION.

- Surface treatments have a direct impact on the performance of customers' products through the reduction of friction and wear.
- Energy consumption is lowered, operational and maintenance costs reduced and machine and system lives extended.
- Friction can be reduced by 50% and wear by 80% compared to current finishing processes, levels only achievable today using advanced and expensive coatings such as DLC. This can be done at a fraction of the cost and with much lower operational complexity..





Rua Dr. Joaquim Manso 12B
1500-241 Lisbon
Portugal

info@trigger.systems
www.trigger.systems

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

EDP Distribuição, Gulbenkian
Foundation, Sulregas, Municipality of
Lisbon, Municipality of Oeiras



MARKET SEGMENTS

Industry
Municipality

D

Trigger Systems · Portugal

PRODUCT Trigger Systems

Intelligence and technology for efficiency and sustainability

THE NEED.

There is a need for irrigation automation and to find a solution for water and energy waste.

THE SOLUTION.

A portable web platform accessible on a number of devices that can be integrated with a wide range of equipment on the market. Rigger has also developed proprietary equipment for three types of automatic irrigation systems: central controllers, battery operated controllers and pivots. These products are connected to the platform and are highly efficient when compared with alternative commercial solutions.

VALUE PROPOSITION.

- Energy savings.
- More control.
- More production.
- Virtual sensors.
- Water savings.





MARKET SEGMENTS

Industry

D

Wupatec · *France*

Rue Atlantis 20
87068 Limoges
France
dellier@wupatec.com
www.wupatec.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Available on request

PRODUCT WETT

Envelope tracking technology by Wupatec

THE NEED.

The exponential expansion in mobile communications is causing a growing energy demand of more than 100TWh in order to power the radio transmitters of base stations.

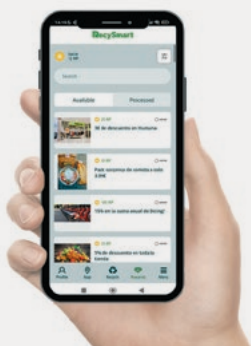
THE SOLUTION.

Wupatec's innovation comprises of electronic circuitry for implementing a patented version of an ET (envelope tracking) technique which, when applied to transmitters supporting 4G and 5G standards, reduces wasted energy by improving transmitter efficiency.

VALUE PROPOSITION.

- Reduces base-station's operating expenses (electricity bill) and capital expenses.
- Reduces the number of transmitters.
- Reduces the environmental loading of communication systems.





MARKET SEGMENTS

Municipality

D

Candam · Spain

Sant Adria 66, Nave 8
08030 Barcelona
Spain

benjamin.varese@candam.eu
www.candam.eu

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Valoriza Sacyr, FCC, PreZero,
Saubermacher, Sotkon, City Council of
Madrid, City Council of Guadalajara,
City Council of Higuera, City Council of
Debarrena, City Council of
Torrelavega, Camping Sangulí

PRODUCT RecySmart

**A unique cost-effective technology to
increase packaging recovery rates**

THE NEED.

Waste services need affordable and scalable technologies to apply the correct incentives policies and increase packaging recovery rates to comply with EU legislation.

THE SOLUTION.

RecySmart offers a stand-alone IoT device with Europe-wide patented technology that turns any waste bin into a smart bin. Fully adaptable to existing bins, the patented Smart Ring system recognises all types of packaging material in real time thanks to acoustic techniques combined with AI algorithms. Packaging recovery rates are incentivised with easy and affordable Return and Earn schemes.

VALUE PROPOSITION.

- Increases packaging recovery rates.
- Digitises the waste cycle.
- Universal Scanning and AI characterisation enables double verification of the packaging material.





MARKET SEGMENTS

Municipality

Industry · Non Residential building

D

Gradis · Poland

Jasnogorska 9
31-358 Kraków
Poland

biuro@gradis.pl
www.gradis.pl

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

GE Lighting, Schreder, Pabianice
Municipality, Tbilisi Master Plan

PRODUCT g.Platform

End-to-end solution covering all steps of outdoor lighting management for cities, utilities and fixture vendors

THE NEED.

Outdoor lighting requires a significant amount of energy at a high cost. A better way to manage lighting infrastructure as well as decrease light pollution, increase outdoor security and enhance user experience is needed.

THE SOLUTION.

Gradis has developed a unique platform for the design, control and management of outdoor lighting infrastructure. PhoCa uses state-of-the-art AI algorithms to obtain energy savings of over 70% for a single project. With the ability to calculate optimal parameters for existing and new lighting infrastructure, it offers a complete ecosystem for outdoor lighting installation – inventory, design and control.

VALUE PROPOSITION.

- Compliance with existing lighting standards and regulations.
- Control and maintenance of existing lighting infrastructure.
- Decrease in negative light pollution that impacts health.
- Optimisation of energy usage (even 80% of energy consumption reduction for new installations).
- A better street and road lighting user experience.
- Dynamic management of street lights intensity.
- Investment payback shortened by 34%.





MARKET SEGMENTS
Municipality
 Transport & mobility

D

Illicov · France

Avenue de L'Europe 34
 38100 Grenoble
 France
 marie.martese@laroueverte.com
 www.illicov.fr

✓ STARTING SALES

CUSTOMER REFERENCES

1 open line Vercors / Grenoble;
 1 open line Annecy Genève;
 1 B2G customer: Département de l'Isère

PRODUCT Illicov

Commuters share their daily trip via carpooling lines and guaranteed travel

THE NEED.

The cost of commuting (in terms of price and stress levels) is a major concern for commuters. The supply of public transport is growing at a slower pace than demand, and there is no easy and reliable way to share a daily trip.

THE SOLUTION.

For commuters: illicov offers the ability to enjoy a smooth and reliable commute, save money, socialise or network, and take action against climate change.

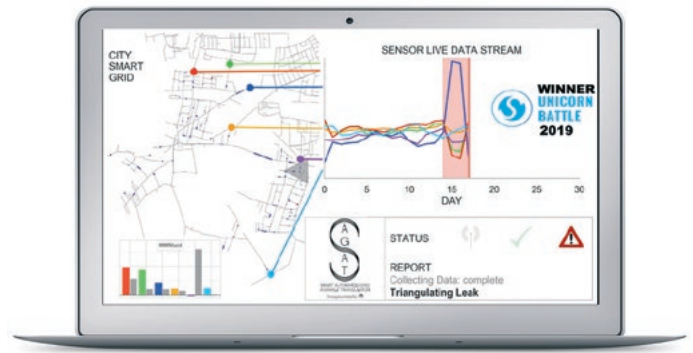
For public transportation authorities: illicov is the way to increase their public transport offer in a cost-efficient way.

For cities / territories: illicov enables city authorities to enhance the attractive qualities of urban settings and to tackle the problem of traffic jams and pollution (noise, air).

VALUE PROPOSITION.

- Drivers: carpool without the necessity for planning and easily earn up to 200 euros per month.
- Passengers: carpool without constraints or worries about possible cancellations.





Parking 6
85748 Garching, Bavaria
Germany
manuela.pehle@olt-dss.com
www.omegalambdatec.com

✓ PILOT

CUSTOMER REFERENCES

SWM Munich

MARKET SEGMENTS

Municipality

D

OmegaLambdaTec · Germany

PRODUCT

Data-driven Water Leakage Locator

Precision leak detection: smart and automatic

THE NEED.

More than 5% of drinking water can be lost between the source and the consumer. Utility companies are officially required to reduce this percentage and must find a way to take immediate and efficient action.

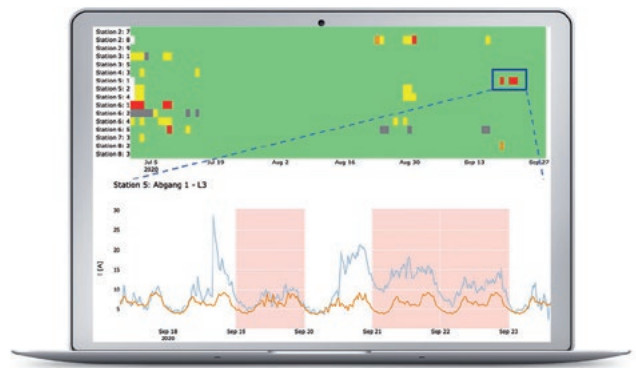
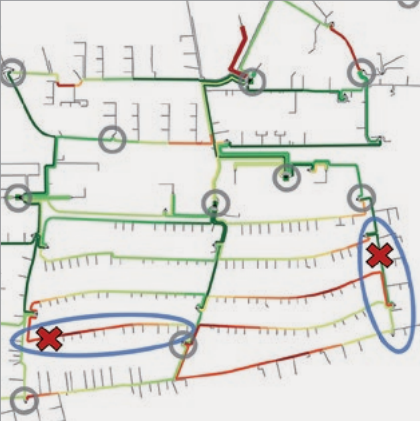
THE SOLUTION.

The solution is a physics-based digital twin simulation framework that makes use of the existing sensor infrastructure, offers a leakage localisation heat map with the optimal derived leak position indicated and that signals algorithms for the detection of water leakages.

VALUE PROPOSITION.

- Meets official requirements and those of water supplying cities.
- Minimises the time consuming efforts of repair teams.
- Saves costs on the full detection and repair process.
- Saves natural resources.
- Significantly reduces the amount of wasted drinking water.





Parking 6
85748 Garching, Bavaria
Germany
manuela.pehle@olt-dss.com
www.omegalambdatec.com

✓ PILOT

CUSTOMER REFERENCES

SWM Munich

MARKET SEGMENTS

Municipality

Power DSO

D

OmegaLambdaTec · Germany

PRODUCT Real-time Grid Monitoring

Automatic detection of anomalies in smart low-voltage networks

THE NEED.

The energy transition poses challenges for LV distribution network operators with the increasing complexity and additional stress of decentralised PV systems and high peak EV charging stations. Faster data-driven insights are needed to improve grid maintenance and prevent blackouts.

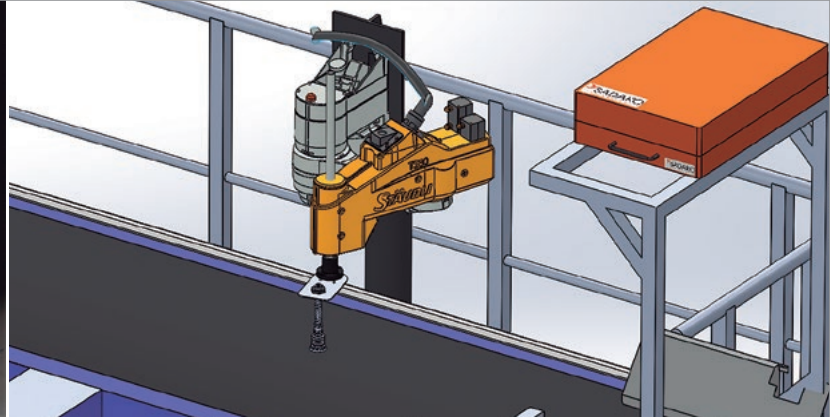
THE SOLUTION.

OmegaLambdaTec provides an integrated view in quasi real-time on network status and upcoming issues, including the automated detection and localisation of network anomalies and power line defects.

VALUE PROPOSITION.

- Investment-optimised sensor positioning for smart grid roll-out.
- 24/7 monitoring of sensor data with automatic detection and localisation of anomalies and network defects.
- Prevention of blackouts via early identification of broken power lines and critical issues.
- Significant cost reductions for network maintenance and manual inspections.
- Identification of grid over-stressing and optimised network expansion requirements.





MARKET SEGMENTS

Municipality

D

Sadako · *Spain*

Av. Madrid 63, Esc. B 1º 5ª
08028 Barcelona
Spain

info@sadako.es
www.sadako.es

✓ **STARTING SALES**

CUSTOMER REFERENCES

BHS (Bulk Handling Systems)

PRODUCT Max-AI TM

Innovating artificial intelligence and robotics for a better world

THE NEED.

Waste treatment plants are subject to the loss of huge amounts of valuable material (2 M € per plant/per year on average) because current processes and technology are not able to recover them in a cost-efficient way.

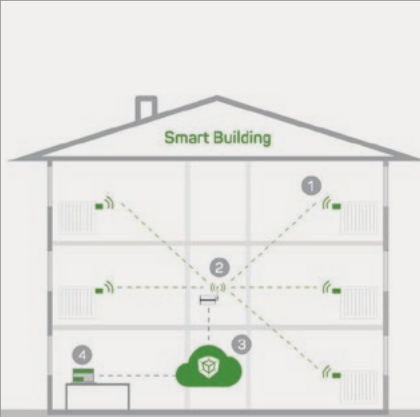
THE SOLUTION.

Max-AI is a waste robotic sorter (a product of the US company Bulk Handling Systems) powered by Sadako AI visual detection capabilities.

VALUE PROPOSITION.

- Increased waste recovery rate in waste treatment plants.
- Low operating and maintenance costs.
- No initial investment required.





MARKET SEGMENTS

Non Residential building

Heating & Cooling · Municipality · Power DSO

D

Betterspace · Germany

Oberpörlitzer Straße 2
98693 Ilmenau, Thuringia
Germany
anfragen@betterspace360.com
www.betterspace360.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

More than 1600 customers, e.g.
Hotel chains like Best Western
and Plaza hotels, Boutique Hotels,
Conference Centers and many more

PRODUCT better.energy

Intelligent room control for non-residential buildings

THE NEED.

Unoccupied rooms in hotels, nursing homes, schools, corporate buildings and many other types of non-residential buildings are often heated or cooled throughout the day. This leads to unnecessarily high energy consumption, carbon dioxide emissions and phenomenal heating bills.

THE SOLUTION.

better.energy turns buildings into smart buildings, boosting their energy efficiency. The intelligent room control heats rooms automatically depending on the occupancy; only occupied rooms are heated. The system also detects open windows and adjusts heating behaviour automatically. This reduces energy consumption by up to 31 percent. State-of-the-art LoRaWAN technology creates a future-proof and scalable solution. better.energy is comfortably managed via web access.

VALUE PROPOSITION.

- Increases comfort.
- Lowers carbon emissions and protects the environment.
- Reduces energy consumption by up to 31 percent.
- Reduces operating costs.
- Future-proofed wireless communication via LoRaWAN.
- No construction measurements required.
- Quick and easy to install and manage.





MARKET SEGMENTS

Non Residential building

Battery industry · Municipality

D

Bin-e · Poland

Pasjonatów 9
62-069 Dąbrowa, Wielkopolska
Poland

contact@bine.world
www.bine.world

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Our customer base spans from global corporations, through facility management companies up to municipalities. Some of our notable clients are: Ambilamp (Spain), Kaufland (Romania), Evac (Finland), Dell (Poland), Accenture (Netherlands), Deutsche Bahn (Germany), Fujitsu (Poland), Danske Bank (Sweden), Sodexo (Sweden), ISS (Denmark), McDonald's (Poland), Power Bear (UAE), Żuromin Municipality (Poland), Saubermacher (Austria), Hido Tech (Israel), And More (Switzerland), Milieu Service Nederland (The Netherlands), Asekol (Poland)

PRODUCT Bin-e AI

The world's most advanced AI-based smart bin, able to recognise and sort waste automatically

THE NEED.

In public spaces, an efficient waste sorting and management system is difficult to implement. Traditional sorting methods tend to be inefficient, and waste management costly. A lack of digitalisation in the sector exacerbates the problem.

THE SOLUTION.

Designed for public areas, Bin-e uses AI and other innovative technologies to increase the efficiency of recycling and encourage better user behaviour towards waste disposal. The system automatically recognises and separates waste, achieving an accuracy of over 92%. Data is provided on waste production, enabling the creation of detailed statistics. These can be put to excellent use in corporate social responsibility (CSR) reporting, optimising waste management operations.

VALUE PROPOSITION.

- Ensures raw materials are sorted correctly, including complicated types such as e-waste and lightbulbs.
- Packaging can go straight to recovery without having to be reprocessed in sorting plants, increasing the efficiency of the recycling chain.
- Optimises waste management, reducing costs for the infrastructure owner.
- Customised content can be displayed allowing businesses to make recycling more engaging and promoting CSR initiatives.





MARKET SEGMENTS

Non Residential building

Battery industry · Municipality

D

Bin-e · Poland

Pasjonatów 9
62-069 Dąbrowa, Wielkopolska
Poland

contact@bine.world
www.bine.world

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Here is a list of electrowaste companies, which has already implemented the Bin-e Electro into market.

Ambiwave: https://ambilamp.es/comunicacion/gabinete_de_prensa/noticias/alcampo-y-nhood-se-suman-al-reciclado-inteligente-con-la and <https://ambiwave.com/>

Asekol: <https://asekol.pl/innowacyjne-urzadzenie-smart-ecobox/>

PRODUCT Bin-e Electro

A solution that enhances the collection of valuable resources, such as bulbs, batteries and e-waste

THE NEED.

In public places, such as large offices, supermarkets and airports an efficient waste sorting is hard to introduce. Things become more difficult when specific waste disposal is required. Users must be aware of how to dispose of their waste and where dedicated collection points are located.

THE SOLUTION.

Bin-e has developed two models for specific waste materials. Bin-e AI Electro uses AI to identify and separate electro waste. The Bin-e Electro line has been introduced to the market in collaboration with AMBILAMP. These devices revolutionise smart recycling by enhancing the collection of valuable waste including bulbs, batteries, and electronic appliances. The devices are connected to the app to provide real-time data and fraction fill level based on weight.

VALUE PROPOSITION.

- Ensures raw materials are sorted correctly including complicated types such as e-waste and lightbulbs.
- Packaging can go straight to recovery without having to be reprocessed in sorting plants, increasing the efficiency of the recycling chain.
- Optimises waste management, reducing costs for the infrastructure owner.
- Customised content can be displayed, allowing businesses to make recycling more engaging and promoting CSR initiatives.





MARKET SEGMENTS

Non Residential building

Battery industry · Municipality

D

Bin-e · Poland

Pasjonatów 9
62-069 Dąbrowa, Wielkopolska
Poland

contact@bine.world
www.bine.world

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request.

PRODUCT Bin-e Reward

A system designed to collect and recycle empty packaging and reward customers in return

THE NEED.

Supermarkets struggle with extended producer responsibility (EPR) and regulatory measures on deposit-return systems, which are being implemented in more and more countries.

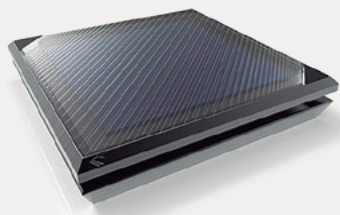
THE SOLUTION.

Bin-e Reward is a system that streamlines recycling by collecting empty packaging and rewarding customers. It encourages eco-friendly habits, and aligns with regulatory measures regarding deposit-return systems or extended producer responsibility (EPR). Suitable for large grocery stores and smaller retail spaces, it promotes sustainability while offering tangible rewards for recycling efforts.

VALUE PROPOSITION.

- Ensures raw materials are sorted correctly including complicated types such as e-waste and lightbulbs.
- Packaging can go straight to recovery without having to be reprocessed in sorting plants, increasing the efficiency of the recycling chain.
- Optimises waste management, reducing costs for the infrastructure owner.
- Customised content can be displayed, allowing businesses to make recycling more engaging and promoting CSR initiatives.
- Incentivise customers to recycle thanks to coupons which are printed after throwing away returnable waste such as plastic bottles or metal cans.





**ENERGY
FLOORS**

MARKET SEGMENTS

Non Residential building

Municipality · Off Grid · Transport & mobility

D

Energy Floors · *The Netherlands*

Directiekade 12
3089 JA Rotterdam
The Netherlands
jury@energy-floors.com
www.energy-floors.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Interface, Dura Vermeer, Kerkebosch
Zeist, ABN Amro, Russian Railway
Research Institute

PRODUCT Energy Floors

Energy converting floor systems for high footfall areas

THE NEED.

In the fight against climate change, raising awareness about energy production and energy consumption is an important element. People need to be engaged and educated about the importance of renewable energy and how to reduce their carbon footprint.

THE SOLUTION.

Interactive smart floors that generate energy and make sustainability visible. They convert kinetic energy from human activity and solar energy to usable electricity. Multiple uses include generating power from dancing and data harvesting in public outdoor spaces.

VALUE PROPOSITION.

- Helps meet sustainability targets, while interactively teaching about renewable energy.
- Practical, educative and fun.





Chemin de la Plaisse 830
73370 Le Bourget-du-Lac
Auvergne Rhône-Alpes
France

y.veschetti@heliup.fr
www.heliup.fr

✓ **STARTING SALES**

CUSTOMER REFERENCES

Strategic partnership
with Suprasolar

MARKET SEGMENTS

Non Residential building

Industry · Municipality · Solar PV

D

Heliup · France

PRODUCT HELIUP Stykon®

Light and durable PV panels

THE NEED.

Solar's potential contribution to the total electricity mix is around 25%. However, over 80% of commercial and industrial buildings cannot support the weight of standard solar panels on their roofs. Current solutions are unsuitable due to the insufficient durability of polymer or its composites.

THE SOLUTION.

HELIUP produces lightweight solar PV modules suitable for the large flat rooftops of commercial and industrial buildings. This innovative technology has been developed at CEA and provides an insurable, reliable and efficient solar PV solution compatible with buildings with load limitations.

VALUE PROPOSITION.

- Low weight thanks to thinner glass: 5kg/m² (2 to 4 times lighter than standard panels at 12 to 20kg/m²).
- Long lifetime thanks to glass: equal to that of standard panels with 12 years of product warranty, 25 years of production warranty.
- Same total cost as standard panels (including mounting time).
- Quick and easy installation: at least twice as fast installation time (mounting of PV panel on top of the roof): <1 min/module.





Binnendelta 7C
1261 WZ Blaricum
The Netherlands
brendan@getlyv.com
www.getlyv.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Non Residential building

Energy Storage Solutions · Municipality · Residential Building

D

Lyv · The Netherlands

PRODUCT Lyv Energy Management Solutions

Autonomous and reliable energy transition for companies, with a smart battery solution for professional use

THE NEED.

Centralised fossil energy production is being transformed into decentralised sustainable energy production, which relies on sun and wind. Sustainable energy generation, however, does not match demand, creating imbalance and the overloading of the network.

THE SOLUTION.

An advanced energy supply system for monitoring, storing and optimising energy that enables customers to receive up-to-date consumption information and insights to reduce costs; increases the use of sustainable energy; incorporates a battery system that reduces costs by peak shaving; maintains reliability and operates for hours without external power; and includes smart modules: custom AI-driven optimisers automated to maximise on energy efficiency.

VALUE PROPOSITION.

- LYV energy monitoring - insights on saving opportunities and reports on progress.
- Real-time monitoring - a real-time view on consumption recorded every 10 sec
- Standardised energy reporting - compliant reports generated every 15 min.
- Energy optimisation - based on data, Lyv optimises energy flows with an advanced energy management system.
- Energy storage - smarter use of energy is becoming increasingly important and batteries play a key role in this.

Lyv's various battery systems for companies solve problems caused by grid congestion or provide a higher financial return.





MARKET SEGMENTS

Non Residential building

Heating & Cooling · Municipality

D

Qien · The Netherlands

Jan Tinbergenstraat 396
7559 ST Hengelo
The Netherlands
info@qien-online.com
www.qien-online.com/eng

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

City Counsel Groesbeek, Provincial
house Overijssel, Zwolle, Wehkamp,
Zwolle

PRODUCT Qien

Makes existing building management systems smarter with AI

THE NEED.

Current building energy management systems (BEMS) have room for improvement. The cost to install, maintain and utilise them is too high, and there should be smart building technologies in place to ensure that energy is being used efficiently in the entire building.

THE SOLUTION.

The Cloud Energy Optimizer (CEO) is a cloud-based AI-driven add-on to existing building energy management systems (BEMS). Based on the weather forecast, it accurately predicts the energy needs of the building (by zone). This allows for energy savings of 10% to 50% plus other cost reductions, and increases indoor comfort. Simple to install, the system is fully compatible with existing buildings.

VALUE PROPOSITION.

- Contributes to sustainability goals.
- Enhances indoor comfort.
- Extends the lifespan of technical installations.
- Instant and significant energy and cost reductions by 10% to 40%.
- Use of the most sustainable and/or cheapest energy available.
- No adaptations required for heating, ventilation and air conditioning (HVAC) system or building.





31 Rue Pierre Mendès
38320 Eybens
France

Li-liza.sun@schneider-electric.com
www.schneider-electric.fr

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Rexel



MARKET SEGMENTS

Non Residential building

D

Schneider Electric · *France*

PRODUCT PowerTag NSX

Wireless energy meter for indoor circuit breaker

THE NEED.

Buildings have significant potential for progress in reducing energy consumption. Performance monitoring appears to be an attractive solution, but that currently on offer requires wiring and is expensive.

THE SOLUTION.

A compact, easy-to-install wireless energy sensor that simplifies the connectivity of individual breakers to a building management system (BMS). It can provide precise, real-time data to building owners and facility managers. Data transfer via ZigBee. No cables necessary for the communication of information inside the smart panels. High precision and stable technology and an optimised assembly process to reduce the cost and minimise assembly errors.

VALUE PROPOSITION.

- Ability to reduce electrical consumption by up to 30%
- Alarm sounds on abnormal behaviour of electrical installation.
- Class 1 energy measurement.





MARKET SEGMENTS

Non Residential building

Solar PV

D

Voltaro · Germany

Karlstr. 12
80333 Munich
Germany
alessandro.Mauri@voltaro.de
www.voltaro.de

✓ STARTING SALES

CUSTOMER REFERENCES

Among others: BNP Paribas REIM,
Wealthcap, alstria office REIT-AG,
Savills Investment Management,
DW Real Estate, Deutsche Konsum
REIT-AG, Quantum Immobilien AG,
Momeni Group

PRODUCT Voltaro

The easiest way to commercial onsite solar
- the digital one-stop shop connecting
owners, tenants and installers

THE NEED.

Realising commercial onsite solar is a challenge for building owners and companies due to the current opaque and fragmented market of solutions and providers. Additionally, the bottleneck in craft capacity calls for a new approach aimed at significantly increasing the speed of the solar rollout.

THE SOLUTION.

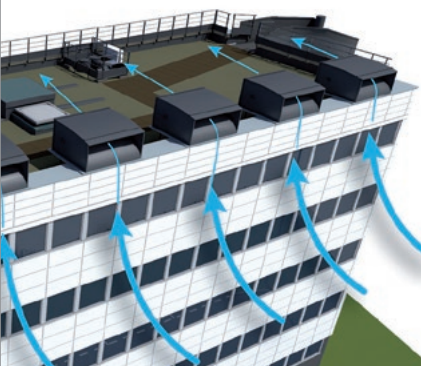
From planning to operation, Voltaro's digital end2end process provides onsite solar efficiently, creating a seamless customer experience. A projecting platform provides a simple and scalable way to connect all stakeholders, deliver transparency and build trust as well as the best and most cost-efficient offer. This makes commercial onsite solar implementation easy and reduces the craft bottleneck.

VALUE PROPOSITION.

Commercial building owners and companies benefit by:

- Discovering the solar potential of buildings with an automated remote portfolio analysis of solar potential, impact and profitability.
- Obtaining the best offer for pre-qualified projects via digital feasibility studies and tenders with vetted partners.
- Outsourcing operational duties such as the energy management to Voltaro's software-enabled solar operations team.





MARKET SEGMENTS

Non Residential building

D

Wind my Roof · France

Boulevard de Picpus 80
75012 Paris, Île de France
France

juliette.fournand@windmyroof.com
www.windmyroof.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Municipality of Colombes, Public
housing company Rouen Habitat,
Luxembourg Airport, Vonovia
Germany, Leclerc, FM Logistic, etc.

PRODUCT WindBox

WIND my ROOF brings local and renewable energy to buildings by combining rooftop wind turbines and solar panels.

THE NEED.

Buildings account for 40% of total final energy consumption and 36% of CO₂ emissions in the EU alone. Each member state must meet the dual challenge of energy autonomy and reduction of carbon emissions generated by the sector.

THE SOLUTION.

The WindBox is a compact module combining a shrouded turbine (4m², 1.60m high) with two photovoltaic solar panels on top. Positioned on the edge of buildings, the WindBox benefits from accelerated winds and good exposure to the sun. Installed power is 1,500 W for the wind turbines and 750 Wp for the solar panels. The technology is now patented (FR3100289).

VALUE PROPOSITION.

- Able to produce clean power on commercial and logistics buildings with roofs too fragile for solar panels.
- Can complete an existing solar panel installation to maximise the return on investment and bring energy generation at night.
- Exceptional carbon reduction: electricity produced through the Windbox has a lower carbon intensity than solar panels.
- Allows for clean electricity production on buildings in areas with little sunshine.
- A 5k€ wind study delivered by the company proves the profitability of a project using WindBox.





Rue Nicolas 11
L-2176 Luxembourg
Luxembourg
tadashi.kubo@acbiode.com
www.acbiode.com

✓ PILOT

CUSTOMER REFERENCES

We have already secured 2 pilot projects with major Japanese construction companies Shimizu and Tsuchiya.



MARKET SEGMENTS

Residential Building

D

AC Biode · Luxembourg

PRODUCT Reco Glass

Bringing the power of carbon capture to the people

THE NEED.

According to the International Energy Agency, building operations account for 30% of final energy consumption worldwide. However, current carbon capture systems tend to consume too much energy themselves, reducing their good work.

THE SOLUTION.

Reco Glass captures CO₂ through air filters and uses it to produce glass. Indoors, Reco Glass reduces the need of high-energy ventilation systems. In the open air, Reco Glass filters make use of natural wind: on ships, for example, there is less need for energy-intensive fans used in traditional direct air capture technology. Uniquely, the Reco Glass filter uses a dry process, which is more economical than that of other DACs, and the material produced can be used to make low-carbon glass.

VALUE PROPOSITION.

- Low-energy CO₂ capture offers an accessible and economic solution ideal for domestic air filters.
- Reduces energy use of other carbon capture systems through low ventilation requirements in buildings.
- Helps to decarbonise the glass manufacturing process, lowering carbon emissions for device users and allowing businesses to achieve their carbon offsetting goals.





MARKET SEGMENTS

Residential Building

Non Residential building

D

Dom'Innov · France

Chemin des Noyers 532
38530 Chapareillan
France

info@blokiwood.fr
www.blokiwood.fr

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

More than 200 houses and renovation projects, one public high school's external insulation completed, a reseller/builder in the Netherlands conducting high-end construction work.

PRODUCT

Blokiwood

The 3-in-1 building block

THE NEED.

The BlokiWood® modular wall system is specifically designed for the needs of extension and elevation, especially on sites that are difficult to access.

THE SOLUTION.

Blokiwood® features 30 standard modules making it suitable for each and every construction, even the most complex. Lightweight enough to be carried by hand, it can be used on every construction site. Buildings can be created quickly and provide high performance thermal insulation.

VALUE PROPOSITION.

- Answer to the construction industry's professional need for a high-performance, easy-to-use and lightweight solution.
- Blokiwood® breaks down load-bearing walls into 60-cm modules while virtually eliminating thermal bridges and air leaks.
- This standard product builds insulation and airtightness directly into a building's load-bearing walls.





MARKET SEGMENTS

Residential Building

Municipality · Non Residential building · Solar PV

D

EnerBIM · France

Impasse des Acacias 2
31840 Seilh
France

philippe.alamy@enerbim.com
www.enerbim.com

✓ STARTING SALES

CUSTOMER REFERENCES

Successful testing of the eCatalog concept with previous company (HPC-SA) and bioclimatic design solution ArchiWIZARD. References with French suppliers for energy efficient buildings are available on request.

PRODUCT BIMSOLAR eCatalog

Supporting both architectural design and building-integrated photovoltaics (BIPV) product innovation

THE NEED.

Digital innovation is required to boost the emerging building-integrated photovoltaics industry (BIPV). There is a need to connect the supply chain with designers and builders.

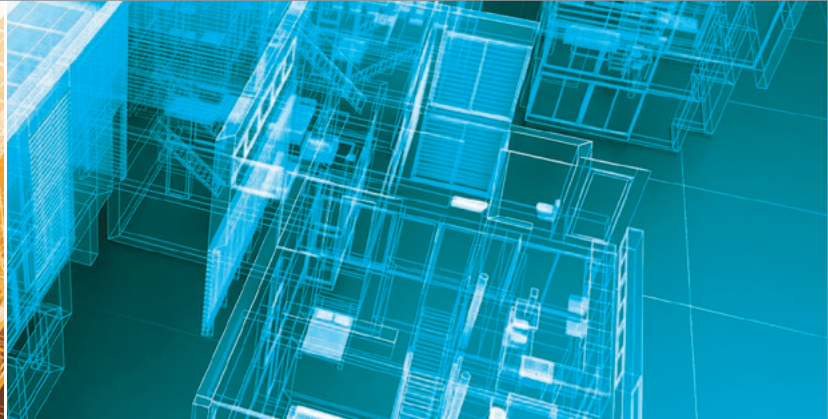
THE SOLUTION.

A software as a service platform that provides support to every stakeholder involved in a solar building design. eCatalogs feed in solar PV simulation with specific BIPV parameters, enriching virtual design facilities and improving thermal and visual performance. Showcasing BIPV products inside virtual workspaces supports supply chain actors and designers, helping them start a direct relationship with commercial commitment.

VALUE PROPOSITION.

- Brand/Status: BIPV products showcasing + referencing.
- Cost reduction: less marketing efforts, boosting the commercial process.
- Contextual prescription (adequacy with the project issues).
- Direct connection to supplier.
- Expandable functionalities and technical and marketing features.
- Virtual libraries of BIPV objects (3D).





MARKET SEGMENTS

Residential Building

Municipality · Non Residential building · Solar PV

D

EnerBIM · France

Impasse des Acacias 2
31840 Seilh
France

philippe.alamy@enerbim.com
www.enerbim.com

✓ STARTING SALES

CUSTOMER REFERENCES

Over 50 users of the freeware.
Big players, first strong references
include: _x000D_ - BOUYGUES
Innovation _x000D_ - SUNSOAK
design _x000D_ - EMIRATES Insolaire,
SWISSINSOL

PRODUCT BIMSOLAR eServices.

Digital and expert services for solar simulation and energy modelling

THE NEED.

Digital innovation is required to boost the emerging building-integrated photovoltaic industry (BIPV). There is a need to connect the supply chain with designers and builders which provides a challenge.

THE SOLUTION.

A software as a service platform providing support to every stakeholder involved in a solar building design. Standard services (free) include a BIPV feasibility study in a 3D virtual workspace. Premium services (paid) embed expert features for BIPV calculation, virtual design facilities, products and projects showcasing. It offers 3D virtual workspaces, business networking facilities and connection to BIM (building information modelling) processes and real time simulation.

VALUE PROPOSITION.

- Much more accessible than traditional software.
- Showcases customer's innovations (projects, products), helps referencing.
- Instant results, intuitive, self learning.
- Cuts costs, saves efforts, accelerates design and decision processes.
- Customisable, online personal workspace, versatile services delivery.
- Freemium business strategy; flexible pricing.
- Expandable functionalities and models.





ferroamp

MARKET SEGMENTS

Residential Building

Municipality · Non Residential building · Transport & mobility

D

Ferroamp · Sweden

Domnarvsgatan 16
16353 Spånga
Sweden
mats.karlstrom@ferroamp.com
www.ferroamp.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Vattenfall, Fortum, Riksbyggen,
Skanska, Vasakronan

PRODUCT EnergyHub

Power control by integrated and future proof DC nanogrids.

THE NEED.

As a response to the increasing proportions of intermittent and low marginal cost electricity generated from renewable resources, future power markets will also price the capacity demand of consumers in addition to electricity consumption.

THE SOLUTION.

SOLUTION. A DC nanogrid integrating - PV, storage and EV chargers - with the grid, optimised for medium-sized buildings and adapted to future needs. It enables increased self-production/consumption of electricity. The concept is expanded to connect different buildings with the DC net through a PowerShare concept.

VALUE PROPOSITION.

- Increased self-consumption from behind the meter storage and DC distribution.
- Life cycle cost efficient.
- Low conversion and transmission losses by only one inverter.
- Modular scalability and future proof - from 7 kW to MW range.
- Powerful DC charging of EVs.





heabor

MARKET SEGMENTS

Residential Building

District Heating Grid · Heating & Cooling · Municipality

D

Heaboo · Portugal

Zona Industrial de Taboeira,
Tabpark 27G
3800-055 Aveiro
Portugal

info@heaboo.com
www.hoterway.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Available on request

PRODUCT Hoterway

Thermal battery device that heats cold water in pipes to provide instant hot water with no energy wasted

THE NEED.

Waiting for water to heat results in some 15% of water wasted in buildings across Europe. Conventional solutions use recirculating pumps, which solves the problem but itself consumes excessive amounts of energy; continuous recirculation wastes up to 50% of energy used for heating water.

THE SOLUTION.

Hoterway is a thermal battery based on phase-changing material that heats water in pipes instantly with no energy wasted. This patented technology delivers hot water immediately, recharging only as hot water is used without need for an electrical connection. The product range includes a solution for showers (less than one hour to install) and a solution that can be integrated during construction to supply instant hot water from every tap.

VALUE PROPOSITION.

- Instant hot water available in the entire building.
- Saves up to 15% of water consumption.
- Reduces more than 50% of the energy used for water heating with continuous recirculation loops.





MARKET SEGMENTS

Residential Building

Hydrogen & e-fuels

D

HPS · Germany

Carl-Scheele-Str 16
12489 Berlin
Germany
matthias.holder@
homepowersolutions.de
www.homepowersolutions.de

✓ STARTING SALES

CUSTOMER REFERENCES

Available on request

PRODUCT Picea

100% autarkic and CO₂-free electricity and heat in private residences all year round

THE NEED.

Increasing energy distribution costs and CO₂ emissions put pressure on residential customers who need easy solutions to "go green", and even completely autarkic

THE SOLUTION.

HPS has developed a fully integrated system providing for all electricity and heat demand. Use of hydrogen storage and fuel cells allow for seasonal storage and a constant heat supply, with components such as battery, electrolyser and fuel cell all working together efficiently. Predictive energy management creates a sustainable, electrically self-sufficient and customisable house energy system.

VALUE PROPOSITION.

- CO₂-free and cheaper energy through self-generation: ROI of 7 years.
- Possibility to secure 100% energy needs starting from own PV system, and even go fully off-grid.
- Customer satisfaction in relying on self-generated green energy.





Industrieweg 30
6163 AH Geleen, Limburg
The Netherlands
jop.fellinger@ion-energy.nl
www.ion-energy.nl

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request



MARKET SEGMENTS

Residential Building

D

iON Energy · *The Netherlands*

PRODUCT iON-Energy Box

Generating electricity from the Earth's atmosphere

THE NEED.

To complete the energy mix, solutions are required that are available 24/7 no matter the location, weather and temperature. The atmospheric energy of our planet offers just that; the challenge is to harness this potentially abundant electricity supply.

THE SOLUTION.

iON-ENERGY has developed a means of converting the endless energy of the Earth's atmosphere into electricity. The iON-Energy Box is a device that can deliver electricity to any home anywhere and at any time. Using patented technology, the planet's energy is harvested and transformed into usable electricity in a smooth and scalable way.

VALUE PROPOSITION.

- An abundant source of energy.
- Patented technology.
- Elegant and scalable.
- Electricity for everyone, everywhere and at anytime.





Zweedsestraat 1
7418 BG Deventer
The Netherlands
marcel.vanwaveren@nl.bosch.com
www.nefit-bosch.nl

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Residential Building

Heating & Cooling

D

Nefit-Bosch · The Netherlands

PRODUCT

Silent Heat Pump for Homes

A one-for-one heat pump replacement for gas boilers

THE NEED.

Houses are often poorly insulated, which wastes energy and raises costs. Traditional heat pump systems are noisy, prone to installation and setup errors, and larger than gas-fired appliances.

THE SOLUTION.

The solution is a heat pump system that directly replaces gas boilers. Suitable for existing buildings, the outdoor unit can be integrated into an indoor unit in a 'monoblock' configuration, without the need for separate internal and external units connected by tubes. It operates almost silently, is 'smart-grid-ready' and is equipped with an internet connection for remote monitoring.

VALUE PROPOSITION.

- Single day installation.
- High supply temperatures.
- Low noise operation.
- Remote monitoring.
- Can also provide hot water.





Kungsgatan 41
753 21 Uppsala
Sweden
info@ngenic.se
www.ngenic.se

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Residential Building

D

Ngenic · Sweden

PRODUCT Ngenic Tune

Increased comfort, consistent temperature and complete control

THE NEED.

The built environment accounts for 40% of the world's energy consumption. Efficient energy management in buildings is key to sustainable development.

THE SOLUTION.

Ngenic Tune is a smart thermostat that enables house and villa owners to save energy and money. Combining three small devices and a mobile app, it collects accessible data – indoor temperature, outdoor temperature, and weather – and allows the user to choose and control the desired indoor temperature, while keeping track of the heating patterns and following up on energy savings at the same time.

VALUE PROPOSITION.

- Easy to install: plug and play system sets up in just 20 minutes.
- Easy to use and control via a mobile app, regardless of where the user is.
- Environmentally aware heating: enables both energy savings and cost reductions.
- Increased comfort with a more uniform indoor temperature.
- Supports today's hydronic heating systems.





MARKET SEGMENTS

Residential Building

Industry · Municipality

D

OGGA · France

Boulevard Vivier Merle 96
69003 Lyon
France

Ifantino@ogga.fr
www.ogga.eu

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Altarea Cogedim, Eiffage, Marignan,
Action Logement Group, Les
Résidences Yvelines-Essonne, RIVP,
Vilogia, Grand Lyon Habitat, Alliade
Habitat, Grand Dijon Habitat (H2020),
among others.

PRODUCT Eco Touch & Smart Building

The most viable solutions for the intelligent energy management of housing

THE NEED.

There is a need to address the high energy bills derived from overconsumption; a lack of vision of the current state and energy consumption of building stock; and the fact that energy saving and home automation solutions are still too costly and difficult to use and install.

THE SOLUTION.

OGGA's connected solutions help actors of social housing face the challenges of energy performance, decarbonisation and remote device operation. The solutions enable energy sobriety while maintaining the comfort of tenants. They work on all scales: from heating rooms, to solar panels, individual flats to common areas. OGGA's expertise is based on its own technologies, which allow for the analysis of data to make accurate forecasts. OGGA's products are developed and manufactured in France.

VALUE PROPOSITION.

- Interoperability.
- Functional without internet.
- Automated energy savings.
- Fast installation, no need for configuration.
- Responsive to all buildings and users.





PIONIERKRAFT 

Agnes-Pockels-Bogen 1
80992 Munich
Germany
n.schwaab@pionierkraft.de
www.pionierkraft.de

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Residential Building

Solar PV

D

Pionierkraft · Germany

PRODUCT PIONIERKRAFTwerk

Full service, hardware-based photovoltaic energy sharing for small apartment buildings

THE NEED.

Administrative rules and regulations for self-consumption in multi-apartment buildings severely complicate the implementation of rooftop PV systems. They are a major obstacle to a widespread uptake of PV-generated energy for onsite consumption.

THE SOLUTION.

Pionierkraft enables people to share self-generated renewable energy, which acts within and between multi-family homes and in smaller apartment buildings in an economical and operator-friendly manner. This fills the existing gap for economical PV solutions in smaller residential buildings. With its hardware and service-model, for the first time battery storage can be used collaboratively and tenant power projects can be implemented economically.

VALUE PROPOSITION.

- Increases the proportion of energy consumed and produced locally.
- More people gain access to affordable clean energy.
- Full service and hardware-based.





MARKET SEGMENTS

Residential Building

Non Residential building · Off Grid · Solar PV

D

Samster · *Sweden*

Faktorvägen 12
434 37 Kungsbacka
Sweden

oscar.skogsen@samster.se
www.samster.se

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Stena Fastigheter, Tornet, HSB,
Koppernaes fastighet AS, a number of
private persons

PRODUCT

Samster Solar Hybrid

Combining energy solutions

THE NEED.

Heat pump systems rely on geoenergy. Normally, the borehole in the ground becomes increasingly cold. With larger systems, where a lot of boreholes are present, there is an essential requirement for recharging.

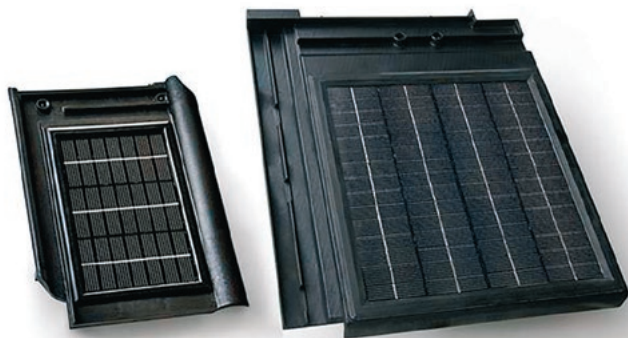
THE SOLUTION.

Samster offers hybrids as a solution for recharging boreholes with thermal energy while producing electricity with solar panels. In this system, the panels are cooled which increases electricity production by 10 to 20 percent.

VALUE PROPOSITION.

- A pack of 10 hybrids with all required components can be offered to heat pump installers.
- Low-cost energy for developing countries.
- System annual performance (SCOP) exceeds 5 in large systems.
- Systems have an excellent performance and high ROI.
- The pack can be offered with 2 hybrids.





Wezelstraat 8A
8850 Ardooie
Belgium
info@smartroof.be
www.smartroof.be

✓ STARTING SALES

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Residential Building

D

Smartroof · Belgium

PRODUCT

Smartroof Suntiles

The production and installation of solar roof 'Suntiles' with integrated photovoltaic elements

THE NEED.

While a great deal of people are interested in solar energy, many are not keen on the aesthetics of standard solar panels. Smartroof Suntiles offer an alternative.

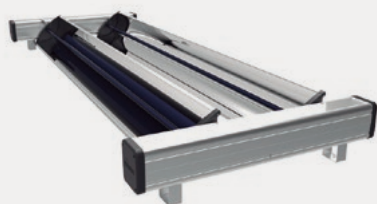
THE SOLUTION.

An aesthetic solar panel solution, Smartroof Suntiles are completely integrated into the roof, making the photovoltaic elements look attractive and natural. They can be combined with several types of 'classic' tiles (Neopan/Renopan, ceramic). Integrated cooling channels result in an important increase in efficiency and lifespan.

VALUE PROPOSITION.

- Building-integrated photovoltaics (BIPV) with internal cooling solution and heat recuperation.
- Cost-effective: financial return in 10 years.
- Easy to install and repair, no special chassis is needed.
- Smooth integration with 'classic' (ceramic) roof tiles.





MARKET SEGMENTS

Residential Building

Municipality · Non Residential building

D

Sunaitec · Portugal

Urbn Quinta da Gordalina
Lt 8 Lj D. Sismaria NA
2415-440 Leiria
Portugal

info@sunaitec.pt
www.sunaitec.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Bela Vista Hotel & Spa Edifício
República 37 NATO Portugal

PRODUCT Sunaitec - RTS Plus

Full architectural integrated solar receivers with increased energy production

THE NEED.

Current solar panel solutions have high maintenance costs and low profitability due to their fixed position during winter, in addition to a limited lifetime because of the effects of corrosion. They also lack a proper architectural integration.

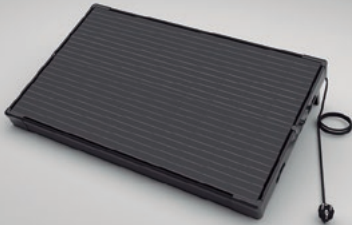
THE SOLUTION.

Based on a concept that aims to harmonise renewable energy, technology and surrounding spaces, Sunaitec has developed products that enable the capturing of solar energy and its conversion into thermal energy and thermoelectricity, with full architectural integration in various frameworks and with high levels of energy efficiency.

VALUE PROPOSITION.

- 19X solar concentration.
- Energy bill reduction.
- Increased longevity.
- Reduction of thermal charge.





Binckhorstlaan 36 36
2516BE Den Haag
The Netherlands
julius.smith@supersola.com
www.supersola.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

BCC (FNAC), Bohemia Energy, Ministry of Defence, Stedin, Engie, Sungevity, diverse utilities and consumers.

MARKET SEGMENTS

Residential Building

Solar PV · Transport & mobility

D

Supersola · *The Netherlands*

PRODUCT Supersola

Plug in the sun!

THE NEED.

Solar panels are a significant investment, yet it is still not possible to test solar panels first or to start out with just a few. The entire process is complex and involves choosing an installer, selecting solar panels, inverters, etc.

THE SOLUTION.

A modular solution that allows users to start with just one panel or interconnect a series. Supersolas are a plug and play solution that can be plugged in to a regular socket and do not require an installer or installation work. They are also portable and can be easily moved to a new home or location.

VALUE PROPOSITION.

- Simply plug in to any ordinary socket.
- No large investment required.
- Return on investment (ROI) the same or better than traditional solar panels.





verv

MARKET SEGMENTS

Residential Building

Solar PV · Transport & mobility

D

Verv · United Kingdom

3 Lower Thames Street
St Magnus House
EC3R 6HD London
United Kingdom

sales@verv.energy
www.verv.energy

✓ STARTING SALES

CUSTOMER REFERENCES

Mitsubishi Electric,
Sustainable Venture

PRODUCT Verv Energy

AI-driven climate solutions

THE NEED.

There is an urgent need to address heating, ventilation and air conditioning (HVAC) energy inefficiencies with more accurate monitoring and predictive maintenance. Businesses are looking to enhance their performance, meet sustainability targets and reduce costs.

THE SOLUTION.

Verv employs pioneering energy technology to transform HVAC system management. With sustainability in focus, Verv empowers businesses to optimise their energy usage, reduce waste and enhance HVAC performance. Real-time monitoring, predictive maintenance and tailored insights enable businesses to make informed decisions that help boost operational efficiency, deliver cost savings and meet sustainability targets.

VALUE PROPOSITION.

- Real-time monitoring of HVAC systems.
- Predictive maintenance capabilities.
- Data-driven insights tailored for HVAC efficiency.
- Identification of inefficiencies and waste reduction.
- Enhanced performance of HVAC systems.
- Cost savings through energy optimisation.
- Board level energy reporting.
- Contribution to sustainability goals and environmental stewardship.





MARKET SEGMENTS

Residential Building

Municipality

D

Watch-e · The Netherlands

Westervoortsedijk 73-SB
6827 AV Arnhem
The Netherlands
luuk@watch-e.nl
www.watch-e.nl

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Portaal, Lefier, Wold & Waard, De
Woonplaats, Ymere, EigenHaard,
BevelandWonen, Nijhuis, Plegt Vos,
Domijn, Wonen Limburg

PRODUCT MyEnergyBundle (Mijnenergiebundel)

Energy management on which you can build

THE NEED.

In targeted markets there is a need to strictly monitor several energy parameters for a long-term period. Customers need these insights to guarantee the sustainability of their homes and the correct function of building-related installations.

THE SOLUTION.

Watch-E's MyEnergyBundle provides insight into all energy parameters for both residents and managers of a sustainable housing project. Extra encouragement is provided by setting targets, with the highest privacy and security standards applied.

Independent, certified hardware, a separate platform for builders is provided for alerts, reporting, benchmarking and analyses. The application is user-friendly for end-users.

VALUE PROPOSITION.

- Communication tools for end-users.
- Opportunity for residents to receive personalised insight into their energy household.
- Reporting and alert features.





wohnwagon

Vorderbruck 21a
2770 Gutenstein
Austria

werkstatt@wohnwagon.at
www.wohnwagon.at

✓ **STARTING SALES**

CUSTOMER REFERENCES

24 Wohnwagons sold in Austria, Germany, Switzerland and Belgium for individual use as well as hotel projects (eg. <http://kleine-heimat.de/>)

MARKET SEGMENTS

Residential Building

Transport & mobility

D

Wohnwagon · Austria

PRODUCT

WOHNWAGON

Independent and sustainable living – completely off the grid

THE NEED.

Customers are looking for innovative living solutions that meet their ecologic standards, that offer an independent supply of water, heat and electricity and that can be set up and dismantled easily, without connection to the grid.

THE SOLUTION.

Wohnwagon offers, for €100.000 – €180.000, a 15 to 33 m² natural space for outdoor living. It has an independent supply of water, heat and electricity and is mobile (can be uprooted and transported easily, if required). It is constructed out of natural building materials: wooden construction, sheep wool insulation, clay.

VALUE PROPOSITION.

- Can often be used as living space where normal buildings are prohibited.
- Independent supply of energy through PV and wind with large capacity for storage.
- Individualised to the needs of customers.
- Solar and wood heating system with intelligent heat control.
- Water circulating system with green filter on the roof of the wagon.



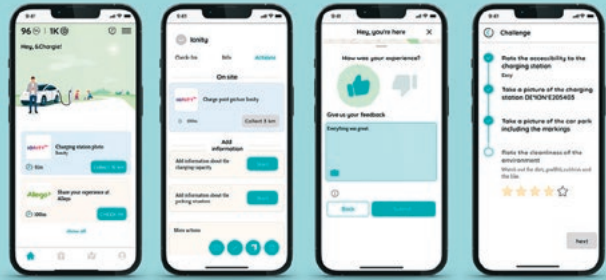
The &Charge Model

EV drivers give feedback | Charge point operators improve their customer experience and reliability



The &Charge app

EV drivers give feedback | Charge point operators improve their customer experience and reliability



&Charge

MARKET SEGMENTS

Transport & mobility

D

&Charge · Germany

Taunusanlage 8
60329 Frankfurt am Main
Hessen, Germany
simon@and-charge.me
www.and-charge.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Customers: IONITY, Aral Pulse, Allego
and mer Strategic partnerships with:
Elli, Audi, Porsche, Polestar.

PRODUCT &Charge

Let's improve charging

THE NEED.

As part of the new ecosystem emerging with e-mobility, charging station operators are taking over the construction and operation of charging stations for e-cars in public spaces. Challenges to overcome include enhancing reliability, creating a seamless customer experience, and boosting profits.

THE SOLUTION.

With the help of an incentive system, the &Charge platform enables e-car drivers to send proactive feedback to charging station operators. In this way, &Charge users become the eyes and ears of the station operator. They carry out inspections independently, report damage, upload pictures or take part in surveys. Supported by AI and linked to other data sources, every customer assessment is evaluated and transferred to an escalation process as an incident with a recommendation for action.

VALUE PROPOSITION.

- Thanks to the aggregated findings on the &Charge platform, operators are no longer "blind" at the charging point.
- Defects and restrictions are recorded promptly and transmitted to the operators in real-time.
- Certified maintenance technicians can be deployed much more efficiently.
- This means significant cost savings and increased uptime of charging points.
- In return for their commitment, e-car drivers receive charging credits: a classic win-win.





Ul. Mościckiego 1
24-110 Puławy
Poland

marek@coat-it.pl
www.coat-it.pl

✓ **STARTING SALES**

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Transport & mobility

Energy Storage Solutions · Hydrogen & e-fuels

D

Coat-it · Poland

PRODUCT Coat-it

Nanomaterials-based coating additives that easily enhance any standard plating process

THE NEED.

The global cost of corrosion and wear is huge, over €2.3 trillion per year. Traditional protective coatings require the use of specific materials (nickel, zinc, chromium). They cause water and environmental pollution and generate significant CO₂ emissions.

THE SOLUTION.

Coat-it offers nanomaterials-based coating additives which can be easily added to a standard plating process, enabling the manufacture of nanocomposite coatings. Nanomaterials-based coatings are more durable, more resistant to corrosion and have new functionalities, such as additives for water dispersion and incorporated nanoparticles. No change to the coating process is required.

VALUE PROPOSITION.

- Reduces the corrosion rate of metal coatings by up to 2.5 times.
- Longer lifespan.
- Objects retain their value.
- Safer devices.
- Less frequent repairs and scrap metals.
- Material savings ~25%
- Low CO₂ emissions -15%
- More plating cycles.





Scenario 1



Scenario 2



MARKET SEGMENTS

Transport & mobility

Industry

D

DCbrain · France

46, rue de l'Echiquier
75010 Paris
France

bruno.lacoste@dcbrain.com
www.dcbrain.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Stef, Heppner, Redur, Lidl, Ceva
Logistics, Gefco, Daher, Italgas, Regaz

PRODUCT DCbrain AI

AI for a sustainable supply chain

THE NEED.

The supply chain is growing ever more complex. There is more and increasingly varied data to be processed, and decarbonisation means rising costs and more challenging requirements.

THE SOLUTION.

DCbrain has developed a dedicated, engaged and sustainable AI solution aimed at supply chain planners. It offers significantly greater control in decarbonising and dynamically adapting the supply chain while also simplifying the routine daily work of planning.

VALUE PROPOSITION.

- An engaged and sustainable AI solution.
- A dedicated solution for logistics flow planning.
- A controlled and innovative solution that has demonstrated its value.
- Positively contributes to the economic and environmental performance of logistics operations.





MARKET SEGMENTS

Transport & mobility

Municipality · Residential Building

D

eCloudCompany · Belgium



Vlamingveld 3
B-8490 Jabbeke
WVL Belgium
patrick@ecloudcompany.eu
www.ecloudcompany.eu

✓ PILOT

CUSTOMER REFERENCES

Available on request

PRODUCT eCloud PLUGO

Charge your car everywhere with a unique mobile charging station

THE NEED.

There is a lack of available charging points, this fuels EV drivers' "range anxiety," the inability of corporate fleets to efficiently cover home charging. Companies lack solutions to reimburse employees who are using EV cars for home charging.

THE SOLUTION.

eCloud has developed a patented system enabling the authentication of an EV-vehicle and a standard power outlet. It incorporates this system in an adaptor, including metering of electricity consumed and communication with the eCloud software platform. Any EV user can charge a vehicle by plugging the adaptor into a standard power socket equipped with a RFID sticker. Automatic billing reconciliation is done by software.

VALUE PROPOSITION.

- Adaptor with metering.
- Communication through WIFI, 4G, Bluetooth, SYSFOX, etc.
- RFID sticker.
- Fee on the consumption of electricity.
- Monthly subscription.





elaphe

Propulsion Technologies

Teslova 30
1000 Ljubljana, East Europe
Slovenia

customer@elaphe-ev.com
www.in-wheel.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Leitner (Italy). ConnX Mobility Platform. Development of certified ground vehicle

Aptera Motors (USA). Aptera 3e Performance and Standard edition vehicles. Development of powertrain for series production.

PSA & Brembo (France, Italy). EU-Live L5e vehicle concept. Development of In-wheel motor.

Multiple undisclosed vehicle manufacturers in automotive and aerospace (EU, US, China, South Korea, Japan, Brasil).



MARKET SEGMENTS

Transport & mobility

D

Elaphe · Slovenia

PRODUCT Elaphe Propulsion Solution

A global leader in electric in-wheel platform technology

THE NEED.

The electric vehicle architectures of today do not exploit technologies with the potential to reduce costs, or use software-defined vehicle behaviour to achieve superior performance, safety and comfort. Manufacturers typically add more hardware instead of redefining the architecture.

THE SOLUTION.

Elaphe's distributed drive architecture offers a paradigm shift in vehicle design using automotive-grade electric motors placed inside each rim. This enables complete control of the sole contact point of a vehicle to the ground, and a massive reduction of space used for the powertrain creating numerous opportunities to optimise the vehicle in terms of cost, function and mission. Elaphe is the first and only company that has launched this technology commercially in passenger vehicles.

VALUE PROPOSITION.

- Significant cost reduction on vehicle level.
- Decrease in vehicle overall energy consumption (not only an increase in efficiency!)
- Ultimate control of each wheel for enhanced safety, performance and comfort.
- Minimal powertrain footprint – increased cabin space and modular platform designs.
- Shorter assembly lines – reduced overheads.
- Advanced motion capabilities.





MARKET SEGMENTS

Transport & mobility

Energy Storage Solutions

D

Gulplug · France

Rue des Berges 32
38 000 Grenoble
France

contact@gulplug.com
www.gulplug.com

✓ PILOT

CUSTOMER REFERENCES

Renault, German car manufacturer,
Tier one

PRODUCT SelfPlug

Automatic and hands-free electric vehicle charging

THE NEED.

There is still a requirement to find a better way of charging an EV on a daily basis easily, quickly and efficiently. SELFPLUG does everything automatically.

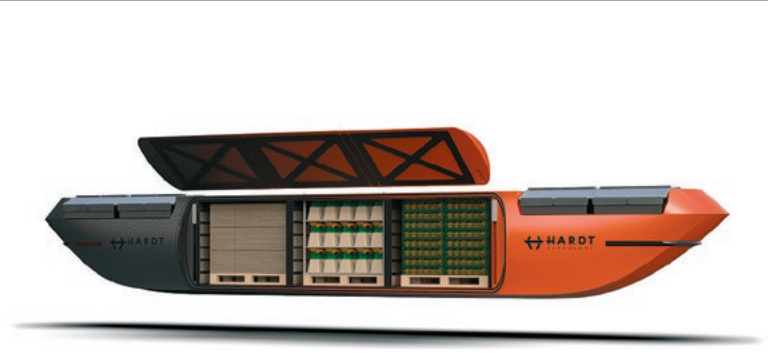
THE SOLUTION.

SELFPLUG is an easy, quick and safe solution to charge an electric vehicle automatically and hands-free. A dome is placed on the floor in advance and plugged into a normal household socket. An EV vehicle can simply park and recharge automatically in a hassle-free way.

VALUE PROPOSITION.

- 100% efficient.
- 50cm parking flexibility.
- No wave radiation.
- Plug and play.
- Portable.
- Reversible V2G..





Marconistraat 16
3029 AK Rotterdam
South-Holland
The Netherlands

connect@hardt.global
www.hardt.global

✓ **EARLY STAGE**

CUSTOMER REFERENCES

Study for Schiphol airport on impact of Hyperloop Cargolop initiative - consortium to use hyperloop for transport of fresh products and flowers in the west of the Netherlands



MARKET SEGMENTS

Transport & mobility

D

Hardt · *The Netherlands*

PRODUCT

Hardt Hyperloop

The future of transportation

THE NEED.

There is a requirement for efficient and economic transportation that improves connectivity between cities while also reducing emissions.

THE SOLUTION.

A new form of transportation suitable for large volumes of passengers or freight, which connects cities efficiently and reliably. It works by means of a linear electric engine that extends across the entire track. The pods are also equipped with a magnetic levitation system that, together with the electric engine, allows them to 'surf' a magnetic wave.

VALUE PROPOSITION.

- Up to 90% reduction in energy use compared to air travel.
- Scalable in speed and distance.
- No transfers: a network of cross-border cities, all connected in one network.
- CO₂ reductions.





MARKET SEGMENTS

Transport & mobility

D

Incitis · *France*

Cours Lafayette 92
69003 Lyon
France

bertrand.vidal@incitis.com
www.incitis.com

✓ PILOT

CUSTOMER REFERENCES

Pre Orders: XPO, Bert And You,
Adam Boisson, Vandendriessche,
Transgourmet, Elis.

Letters of intent: Fraikin, C10, Urby,
Cozigou.

Interested: GT Solutions, Pedretti,
Intermarché, Leclerc, Dachser,
Stricher, Kuene & Nagel, STEF.

PRODUCT H2SPEED

A green revolution in urban freight distribution

THE NEED.

Around 70% of Europeans live in cities and rely on effective urban freight distribution. The challenges, however, are many. There is a necessity for efficient operation on zero emissions; safe and noiseless delivery; traffic jam avoidance; as well as fair and safe conditions for delivery drivers.

THE SOLUTION.

INCITIS reinvents urban truck architecture with H2SPEED, specifically designed for urban use and delivery drivers. H2SPEED introduces a pioneering truck that can be completely loaded/unloaded on "even footing", that is tailored to the variety and unpredictability of urban delivery, and that emits zero emissions and makes zero noise.

VALUE PROPOSITION.

- Zero emissions, zero CO₂, zero noise.
- Drastic reduction of delivery time.
- Two trucks can do the job of three.
- Total cost of ownership equivalent to diesel trucks, and much more economical than zero emission competitors.
- Much safer for drivers and citizens.





MOB-ENERGY

Boulevard Marcel Sembat 41
69200 Vénissieux
France
salim.elhouat@mob-energy.com
www.mob-energy.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

EV Fleets & Employees parking lots : DHL, Enedis, Airbus, Eiffage, Mercedes-Benz, Groupe Bernard (car dealership), FM Logistic, Veolia, Renault Trucks, Vinci, French Army, Dalkia, Artois Mobilités, Fournée Dorée, Chariot ..

Public parking lots : Interparking, Lyon Parc Auto, Parcus, Vinci Autoroutes, City of Saint-Gervais Mont-Blanc...

MARKET SEGMENTS

Transport & mobility

Energy Storage Solutions · Industry · Non Residential building

D

Mob-Energy · France

PRODUCT EIKO, the Evolutive Cube of Power

Meets the rising demand for EV charging in parking lots with a single power supply

THE NEED.

While the demand for EV charging in parking lots is growing, it is still surprisingly difficult to deploy EV charging infrastructure quickly and easily. Upgrading the electrical infrastructure and undertaking extensive civil works are not ideal as they significantly affect a parking lot's operation.

THE SOLUTION.

Mob-Energy offers turnkey solutions that provide charging for any EV in any parking lot. This comes thanks to smart-charging technologies and the use of second-life batteries. Eiko, the Evolutive Cube of Power electrifies up to 20 parking spots with the power of a single charging point, and with no civil works required. What's more, Eiko evolves as needs increase, and can store self-generated energy (solar panels) or energy during off-peak hours.

VALUE PROPOSITION.

- Power input of 10 to 30kW.
- Power output of up to 60kW.
- No civil works needed to deploy the EVSE.
- Smart AC Charging.
- Upgradeable on the go.
- Energy storage in second life batteries.
- Designed and produced in Lyon, France.





Navlandis

MARKET SEGMENTS

Transport & mobility

D

Navlandis · Spain

Carrer Oriola 32
46210 Valencia
Spain
mnavalon@navlandis.com
www.navlandis.com

✓ STARTING SALES

CUSTOMER REFERENCES

Several routes with Marguisa Shipping Lines, the leading international container and project cargo line in Spain. A new route to transport plant-based oils from Northern Europe to South America, inside flexitanks for AAK Denmark A/S was launched in 2023.

PRODUCT Zbox

Foldable shipping containers that reduce transport costs and CO₂ emissions

THE NEED.

Innovation is required in the logistics sector as a means to reduce both operational costs and environmental impact. It is vital to prove that sustainability and profitability go hand in hand.

THE SOLUTION.

Zbox are foldable shipping containers that occupy 80% less space than traditional containers when travelling empty. Transport costs and CO₂ emissions can both be reduced. When travelling unfolded and full, they behave just like a traditional container.

VALUE PROPOSITION.

- Five containers can be shipped in the same space as one traditional one.
- 50% reduction in operational costs.
- Easy to fold and lighter in weight than standard containers.
- Lower production costs.
- Reduced CO₂ emissions.





Ul. Mińska. 63A lok-245
03-828 Warszawa
Poland

d.minx@nevomo.com
www.nevomo.tech

✓ **STARTING SALES**

CUSTOMER REFERENCES

Captrain / ArcelorMittal Bremen: signature of the contract planned Sep 24 > productive pilot for steel coil transports in Bremen steel factory. Collaborations with Thyssen-Krupp and HPA (port of Hamburg) to investigate specific use-cases in Germany. Institute of hyperloop (Emden) purchased the MagRail propulsion system and power electronics as a turn-key solution. Port of NEOM: workshop for a container conveyor belt like logistics approach, connecting the new port with a logistics center(80km). Potential pilot project with SNCF (France).



MARKET SEGMENTS

Transport & mobility

D

Nevomo · *Poland*

PRODUCT Nevomo

MagRail Booster technology: an evolution of existing public and private railways

THE NEED.

Current rail infrastructure has reached its limit due to 190-year-old technology principles. A rapid solution is needed without the need to build new infrastructure. Nevomo's MR Booster enhances existing railways, ports and logistics areas, increasing speed and efficiency with advanced features.

THE SOLUTION.

Nevomo has created the unique MagRail Booster technology, a contactless, AI-enabled propulsion system. It doubles capacity, adds metro-like frequency and offers car-like flexibility by eliminating locomotives and enhancing automation and electrification. First commercial contracts are being finalised with a €7m round now closing and a new €15m Bridge to Series A convertible in H2 24 commencing that includes a co-investment from EIC Accelerator.

VALUE PROPOSITION.

- Increased capacity.
- Greater flexibility.
- Tech simplicity.
- Fast implementation, low TCO (total cost of ownership).
- Higher frequency of operations.
- Regains competitive edge.
- Full electrification of the tracks and elimination of a need for a locomotive (since every wagon is its own locomotive).





NÜWIEL

Holsteinischer Kamp 37
22081 Hamburg
Germany
Natalia.tomiyama@nuwiel.de
www.nuwiel.com

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Available on request

MARKET SEGMENTS

Transport & mobility

D

Nuwiel · Germany

PRODUCT Nuwiel E-Trailer

A smart electric trailer for bikes that accelerates the transition to sustainable urban mobility of goods

THE NEED.

Urbanisation and exponentially growing online sales pose massive challenges to the already complex urban ecosystem: some 80% of traffic jams are caused by delivery vans during rush hour; 21% of CO₂ is caused by road transport; there is a high demand for car-free and pedestrian only zones in cities.

THE SOLUTION.

NÜWIEL has developed an innovative electric trailer (eTrailer) with patented technology which combines an auto-trail sensor, AI-based self-regulating algorithms and a 3-level braking system. The technology enables the eTrailer to automatically accelerate and brake, mimicking every movement of the bike. It can be connected to any (e) bike and used as an electric handcart inside buildings and pedestrian-only areas. Suitable for use by anyone, irrespective of age or build.

VALUE PROPOSITION.

- Offers the flexibility required to move around a city, fulfilling manoeuvrability and stringent safety requirements of urban ecosystems.
- Increased efficiency of existing bike fleet: 3x more payload.
- Time saving: 2x faster delivery time.
- Multi-modal: runs on bike lanes, roads, cobblestones, pedestrian zones and inside buildings.
- Enhanced safety: 3-level brake system (park, electric, overrun) to ensure safety of the rider.
- Low maintenance: robust design with 99% of automotive components.
- User friendly: 95% recommendation rate by IKEA customers.





MARKET SEGMENTS

Transport & mobility

D

Onomotion · Germany

Scheringstraße 1
13355 Berlin
Germany

sales@onomotion.com
www.onomotion.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

Hermes Germany, 2020, Berlin, Germany; 18 ONO PATs Vehicle-as-a-Service (VaaS); Tier Mobility, 2020, Berlin, Germany; 8 ONO PATs VaaS for 2020; Rewe Digital, 2020, Berlin, Germany; 2 ONO PATs VaaS; InFarm Urban Farming, 2020, Berlin, Germany; 5 ONO PATs VaaS; Zurich Versicherung, 2020, Berlin, Germany; 1 ONO PAT VaaS; DPD, 2020, Berlin, Germany; 2 ONO PATs VaaS. GLS, 2020, Germany; 5 ONO PATs VaaS. Florida Eis, 2020, Berlin Germany; 1 ONO PAT VaaS. APCOA Parking Deutschland in March 2022, 10 ONO vehicles for UPS Germany in April 2022.

PRODUCT THE ONO E-CARGO BIKE

Creating transformative change in urban mobility, making cities cleaner and more enjoyable

THE NEED.

Air pollution, road congestion, lack of routing options and high costs are challenges for logistics operators striving to cope with the e-commerce boom. Compounded by the long-term effects of the Covid-19 pandemic, operators struggle to meet the vast and rapidly-changing demands of people worldwide.

THE SOLUTION.

The ONO E-Cargo Bike combines the ease of a bicycle with the cargo capacity of a van. A solution that protects the planet and improves the health of communities, it is emission-free, has a small physical footprint, an easy battery-swapping set-up, a smart electrical system made with Tier-1 quality components, and uses automotive production processes for safety and durability. It has been validated by major logistics players through every stage of its evolution.

VALUE PROPOSITION.

- Powered by green electricity and a 70% smaller physical footprint.
- Versatile modular platform allows for expanded uses and markets.
- Exceptional weather protection and safety, with a vehicle cabin floor.
- Targeted market segments: courier express and parcel delivery, micro-mobility, online retail, catering and passenger transport.
- Lower total cost of ownership (TCO) over time.
- Complete maintenance and service ecosystem.
- Outstanding payload mass and volume.
- Vehicle-as-a-Service (VaaS) model.
- Increased routing and delivery flexibility.





07.10.2015, 05:00 Uhr *
Abfahrt in Pforzheim

254.15 €
inkl. 19% MwSt.

Details und Buchung



Pamyra · Germany

Lützner Str. 116
04177 Leipzig
Germany
info@pamyra.de
www.pamyra.de

✓ CONSOLIDATED SALES

CUSTOMER REFERENCES

Wholesalers and wood-makers.

PRODUCT pamyra.de

Find, compare and instruct transport companies in minutes

THE NEED.

In the transportation industry, a solution is required for a non-transparent market, high transport prices, the considerable effort required for booking transport, and the large number of empty trips made.

THE SOLUTION.

Pamyra offers an automatic distribution channel for hauliers with a single contact point for each delivery. Online booking is available and payments can be made by invoice, cash on delivery, credit card, PayPal or the German payment system Sofortueberweisung.

VALUE PROPOSITION.

- A one-off effort for participating hauliers.
- Compare prices, attributes, customer feedback and quality of all hauliers in one go.
- Direct booking process - no more waiting for offers and reactions.
- Innovative route-vicinity-algorithm.





ROUTAL

Badajoz 32
08005 Barcelona
Spain
xavier.ruiz@routal.com
www.routal.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Field Maintenance: Customers: Prio Energy, Suez, Agbar, Aigües de Barcelona, Global Omnium, Ienova. Savings over 20% efficiency increment. Benefits improved service, reduced management time and process standardization.

Industrial distribution: Clients: Volkswagen, Autosolar, Daimler. Savings: Over 25% cost reduction on last-mile distribution. Benefits: Performance improvement, total control of the supply chain, service improved with more customer retention



Plan better routes

SAVE 30% CO2 EMISSIONS AND COSTS



MARKET SEGMENTS

Transport & mobility

Industry · Municipality · Residential Building

D

Routal · Spain

PRODUCT Routal

Move the world smarter

THE NEED.

Last mile operations are crucial for logistics, distribution, maintenance, energy and transport. Efficient planning cuts costs, enhances service and boosts profits. Tech is vital in effective, risk-free operations, optimising service quality. However, most companies still manage operations manually.

THE SOLUTION.

Routal optimises last mile ops for companies. It streamlines route planning, real-time operations management and driver monitoring, cutting planning time and risk by 90%. The service notifies customers of arrival time, boosting service and reducing failed visits by over 50%. An easy-to-use interface achieves efficiency, service improvement and detailed monitoring. A last mile delivery can be up and running in under 24 hours.

VALUE PROPOSITION.

- User-friendly platform (production in 24h).
- Standardisation of last-mile processes (logistics, maintenance, sales, etc.).
- Reduction of 90% of planning time.
- Reduced operational costs by over 30%.
- Improved service quality and enhanced customer perception.
- Customisable to any kind of company (logistics, utility, maintenance, etc.).





MARKET SEGMENTS

Transport & mobility

D

Scoobic · Spain

Carretera de La Isla, 5
41703 Dos Hermanas, Sevilla
Spain

sergio.gonzalez@scoobic.com
www.scoobic.com

✓ **STARTING SALES**

CUSTOMER REFERENCES

MISSION BOX - MOX = 5 vehicles
SCOOBIC LIGHT in renting (36
month) Jan-2020 in Spain (Madrid,
Zaragoza); FIRST STOP = 2 vehicles
SCOOBIC LIGHT in renting (36
month) Jan-2020 in Spain (Madrid);
LA POSTE = 12 SCOOBIC LIGHT in
renting (6 month) Oct-2020 Rennes &
Nantes; CORREOS: 6 SCOOBIC LIGHT,
VECTALIA: 4 SCOOBIC LIGHT delivered
Oct-2020 Pamplona, Alicante, Murcia,
Teruel; LOGISTICS HOLLAND = 1
SCOOBIC MINI sold Nov-2019 NL.
GAS2MOVE = 5 vehicles SCOOBIC
LIGHT sold March-2020 Spain;
AMAZON Italy = 8 SCOOBIC LIGHT in
renting (3 months) delivered in Nov-
2020 Italy.

PRODUCT

Scoobic Hi-cargo

The ultimate way to deliver goods in urban centres, solving last mile problems

THE NEED.

The last-mile delivery sector needs a new category of vehicles that are electric, able to reduce CO₂ emissions, fast and agile in traffic in an urban environment, easy to park with access to pedestrian areas, but also offering as large a loading capacity as possible.

THE SOLUTION.

Scoobic's vehicles are a new category of fully-electric vehicles with a range of autonomy of up to 100km and beyond in some of its upcoming models, which will also include an innovative removable battery system. Three-wheeled vehicles have the same loading capacity as vans (up to 750kg / 1.400 litres).

VALUE PROPOSITION.

- A new category of vehicle.
- Ability to transport as high a volume and payload as possible (up to 750kg / 1.400 litres).
- Three-wheelers make for safer driving than a motorcycle, while maintaining agility in traffic.
- Can access the city centre with ease and find parking space.
- Can access pedestrian areas legally.





MARKET SEGMENTS

Transport & mobility

D

Swobbee · Germany

Johann-Hittorf-Straße 8
12489 Berlin
Germany

t.duscha@swobbee.com

www.swobbee.de

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Tier mobility, 2021, Berlin, Germany, 8 stations in CaaS contract; Onomotion, 2021, Berlin, Germany, 100 batteries in BaaS contract; Avocargo, 2022, Berlin, Germany, 100 batteries in BaaS contract. Voi Germany, 2023: 18 stations.

PRODUCT Swobbee

The "gas station" for e-micromobility through battery swapping infrastructure

THE NEED.

Operators of light electric vehicle fleets need a secure charging infrastructure. Fully charged batteries should be available all times throughout the fleet's operational area. Batteries are an expensive asset with high investment costs. Battery populations must be monitored and managed very well.

THE SOLUTION.

Swobbee offers an infrastructure of decentralised battery swapping stations with 24/7 battery monitoring and safe and gentle charging. Swapping the battery only takes a few seconds. Swobbee offers two business models: with Battery-as-a-Service, Swobbee offers fleet operators the opportunity to cap the high investment costs and distribute them as operating costs; with Charging-as-a-Service, Swobbee offers sharing fleets a central charging solution for swapping operations.

VALUE PROPOSITION.

- A decentralised, safe charging solution from a single source.
- A software dashboard and app provides the possibility of managing large battery populations with batteries from different manufacturers and designs.
- The BaaS approach offers relief for initial investments in batteries.





MARKET SEGMENTS

Transport & mobility

D

volytica diagnostics

Volytica diagnostics · Germany

Theresienstraße 18
01097 Dresden, Saxony
Germany
claudius.jehle@volytica.com
www.volytica.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Available on request

PRODUCT vdx battery diagnostics engine

Battery diagnosis as a service

THE NEED.

Batteries degrade; interaction between chemistry and exterior influences results in hugely variable end-of-life criteria. Manufacturers + end users are unable to determine the most economical replacement time resulting in waste of productivity, usable lifetime and material of €30bn p.a. from 2025.

THE SOLUTION.

This software solution makes degradation effects transparent and optimises the replacement schedule. Ten years of research has been forged into a scalable cloud platform. By utilising signals that every modern battery system provides, a vdx engine calculates stress levels, replacement times and proposes mitigation strategies, offering a lifecycle management tool for battery assets, accessible for a broad range of industries. With volytica, battery diagnostics become an industrial commodity.

VALUE PROPOSITION.

- Battery diagnostics accessible for a broad range of industries.
- Easy to integrate into existing processes and tools.
- Minimal entry barriers and applicable to a vast range of applications.
- By making use of our services, at least 10% usable lifetime can be extracted from one and the same battery.





Waybler

MARKET SEGMENTS

Transport & mobility

Municipality · Residential Building

D

Waybler · Sweden

Svetsarvägen 8
17141 Solna
Sweden
kurhog@cacharge.com
www.waybler.com

✓ **CONSOLIDATED SALES**

CUSTOMER REFERENCES

Fabege AB, Newsec, Platzer, Bonava

PRODUCT Waybler

Join the fastest slow revolution

THE NEED.

There is a need to develop a mass market for EVs by providing a cost-efficient charging solution that is profitable for both real estate and parking lot owners.

THE SOLUTION.

Waybler has developed a complete system based on a unique business model that enables clients to charge electric vehicles in parking lots located at home or at work. The solution includes an AI cloud charging service, a mobile app and a charging box, and uses the entire time that a vehicle is parked to efficiently distribute power between cars. As a result, many cars can be charged without expensive load peaks.

VALUE PROPOSITION.

- Efficient: cars are charged efficiently based on user needs and available electrical power capacity.
- Profitable: a unique business model that makes the initial investment required low, and enables energy costs to be cut.
- Scalable: new stations can be easily added.
- Simple: cars are charged wherever they are parked, at home or at work.





MARKET SEGMENTS

Transport & mobility

Battery industry · Industry

D

Zeneros · Spain

Muelle de la Aduana S/N
46024 Valencia
Spain

aportoles@zeneros.com
www.zeneros.com

✓ PILOT

CUSTOMER REFERENCES

ITP Aero: aircraft electric propulsion development.

Valenciaport: SELF (Sustainable Electric Freight-forwarder) development.

ArcelorMittal: levitation development.

PRODUCT Zeneros

Electrification and automation solutions from Spanish leader in hyperloop development

THE NEED.

Transport is responsible for more than 25% of global GHG emissions. However, current transport technology cannot achieve intercity mobility sustainability goals. More effective and cooperative options are required.

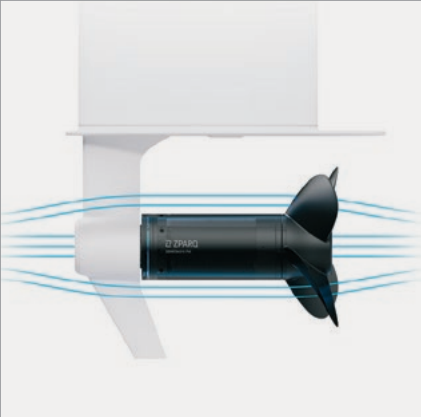
THE SOLUTION.

Zeneros is developing core hyperloop technologies set to revolutionise the current transport portfolio, representing a huge market opportunity. Such technologies can also be exploited in the shorter term in more mature markets, such as electrification and automation. A cooperative approach sees solid industrial players working with hyperloop developers, strengthening the ecosystem. Meanwhile, Zeneros offers electrification and automation solutions to the most demanding mobility segments.

VALUE PROPOSITION.

- The hyperloop offers a zero-emission, scalable means of transport that can carry from 50 to 200 passengers per vehicle at speeds of up to 1,000 km/h.
- Electrification and automation solutions offered to suit most demanding industrial niches.
- End-to-end electrification services.
- Tailored to client needs.
- Cooperative approach.





MARKET SEGMENTS

Transport & mobility

Battery industry

D

Zparq · Sweden

Örkroken 25
13840 Älta Stockholm
Sweden

jonas@zparq.se
www.zparq.se

✓ PILOT

CUSTOMER REFERENCES

Strategic partnerships:
CPAC-Volvo Penta
Swedish sea rescue society
SSPA (now RISE)
Micropower Group
Aston Harald
KTH

PRODUCT Zparq

Making marine propulsion sustainable

THE NEED.

New and improved electric drivetrain technology for propeller-driven watercraft must also meet the growing demand for fossil-free marine transportation. Currently, no submerged electric motor system on the market can combine cost effectiveness with high power and high efficiency.

THE SOLUTION.

Zparq vastly improves marine electric propulsion with a compact and scalable direct-drive system for propeller-driven watercraft. The technology, which overcomes the fundamental limitations of current market offerings, is based on a novel motor design that specifically adapts to submersible applications. A patented passive cooling system enables the motor to be up to 10 times smaller in volume than motors of equal power.

VALUE PROPOSITION.

- Small volume – minimal underwater drag.
- Few parts – low production cost and fewer failure points.
- High efficiency – longer range.
- Submerged – low noise and compact.





Customer case studies

Bringing innovation to market

To advance the energy transition, innovative solutions are needed at scale. In the last 14 years, InnoEnergy has supported start-ups to accelerate and de-risk their solutions and bring them successfully to market. Through our innovation ecosystem we reduce time to market, de-risk innovation and create commercially attractive solutions to empower a sustainable energy future. By bringing our network of over 1,200 stakeholders together with our more than 200 portfolio companies, we are turning opportunity into impact.

Major corporate players are forging partnerships with our portfolio companies to address challenges in their operations and realise gains in efficiency, costs and CO₂ savings. The customer case studies on the following pages illustrate how big companies and entrepreneurs are collaborating to make industry more sustainable and deliver impact.

Energy storage system for industrial self-consumption installation on a farm.

The need.

The facility manager of a large industrial farm in Murillo el Cuende (Spain) was looking to lower the electricity bill associated with internal processes (heating and cooling in animal environments).

Additionally, there was a need to avoid expenditure on an additional power supply, and be able to store excess energy generated on site through a photovoltaic system.

The project.

Beeplanet's sustainable storage unit is integrated into an internal microgrid that also includes photovoltaic generation. All of this is monitored and controlled by an energy management system, which maximises on self-consumption and increases the ROI of the entire project. The storage installation, with a 84kWh capacity, consists of a DC subsystem of second-life automotive batteries, and an inverter to connect the subsystem to the internal electrical grid. The timeframe of the project was 1 month.

Why Murillo's Farm chose to work with Beeplanet Factory

Beeplanet is a leader in second-life batteries and is involved in every stage of a project, including commissioning. In addition, batteries have advantages that convinced the facility management.

- **Modularity:** batteries are expandable and scalable, and future needs of the project can easily be covered.
- **Life extension and performance:** Beeplanet's batteries have optimal performance thanks to its automotive origins. Moreover, whenever they detect, via remote maintenance, that a battery module has reached its capacity limit, they take charge of replacing and recycling it.



Benefits for the customer.

Cost of industrial storage (<1MWh)
<320€/kWh

+200
tons CO₂ saved compared to a first life industrial battery

>70%
saving on the energy bill

ROI
3-5
years

Ezzing Solar platform for MVM.

Helping a utility company develop a distributed generation offering for their customers

The problem

The energy system is transiting to a distributed generation system with energy generated from decentralised renewable sources and consumers taking a more active role. A good relationship between utilities and customers will be key in the years to come, with revenues derived mainly from services and retail.

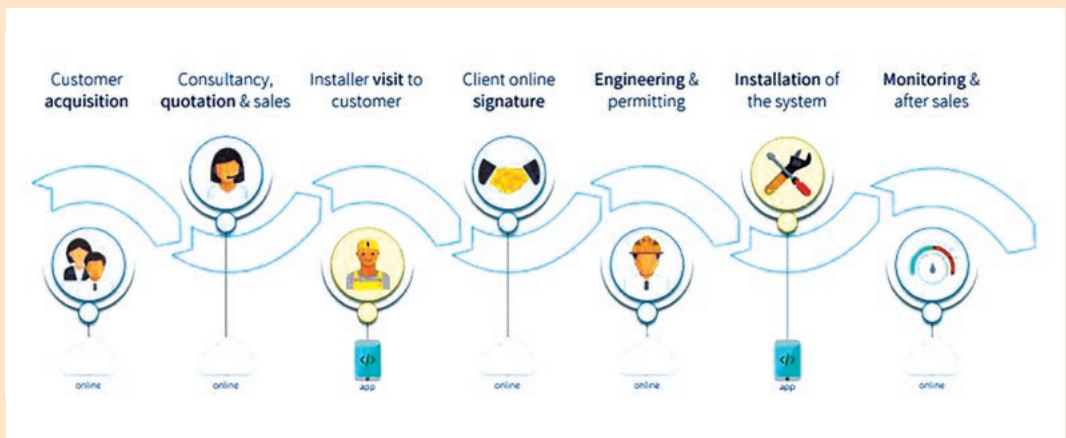
MVM needs to **develop a distributed generation offering** that is user-centric and that provides a high quality experience with minimal hassle for potential customers.

Why MVM chose Ezzing Solar solution

Ezzing's platform covers the whole value chain, from acquiring the customer to formalising contracts through the web. The smooth user experience facilitates the closure of deals quickly and easily.

The platform has been adapted to MVM's brand. It supports MVM in:

- Acquiring new customers.
- Sizing and pricing each customer's need.
- Contracting and signing the offer.
- Managing the logistics of the installation.
- After-sales service.



Benefits for MVM

- Allows for engagement with the end customer during and after sales, while offering a means to cross-sell other energy products.
- Interconnects everyone in the value chain to reduce overhead costs.
- Customer acquisition costs are reduced to a minimum.

Heliac 1.5 MW solar field for an E.ON Denmark district heating plant Lendemarke, Denmark

The challenge

Heat represents more than 50% of total energy consumption in the world but traditional methods of generating heat are highly polluting.

E.ON has ambitious sustainability targets and has put a roadmap in place to reduce GHG emissions and to become carbon-neutral by 2040.

To do so they are actively looking for sustainable solutions with no CO₂ emissions because the transition needs to happen fast. For the city of Lendemarke in Denmark, they were looking to provide sustainable heating to a small community of 335 households.

The installation

A full-scale solar field installation covering 1 hectare of land with 144 energy-efficient solar collectors. Heliac's transparent foil lenses work like giant magnifying glasses. Panels are 4 meters high and rotate on a base so they are always perpendicular to the sun.

Insulated district heating pipes stretching to 13 kilometres in length connect 335 local households, and heat tanks ensure no interruption to supply 24/7.

Heliac's lenses can be mass-produced, reducing the cost of solar systems long term.



1,500
MWh of district
heat annually
produced,
CO₂-free

24/7
heat supply

335
local households
covered

Heliac's
solution requires
25% less
surface area than
traditional flat solar
thermal panels

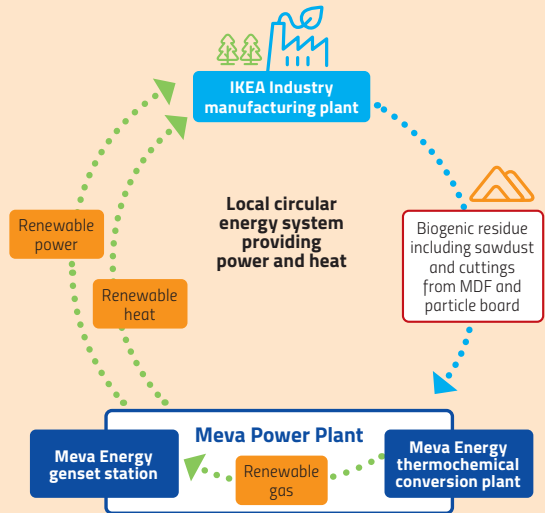
Customer case study



Producing long-term renewable power from low-value feedstocks for IKEA Industry

The problem.

IKEA Industry's largest manufacturing unit, located in Zbaszynek, Poland, produces wooden furniture for IKEA. Power and heat consumption represent the plant's most significant sources of CO₂ emissions. IKEA Industry's goal is to reduce its carbon footprint by 80% by 2025 compared to the level in 2016, and a key step towards achieving this is utilising renewable power in its manufacturing plants.



Why IKEA Industry chose Meva Energy solution.

Meva Energy's thermochemical conversion technology provides a way for the IKEA Industry manufacturing plant to utilise its vast quantities of low value feedstock (wood residue), transforming it into high-efficiency renewable power production.

- 2.4 MW power station to be fueled by renewable gas obtained from wood residue feedstock.
- 19 GWh produced every year.
- 10-year contract whereby Meva Energy delivers and sells power and wood residue reception services to IKEA Industry.
- 16,000 tons of waste wood, contaminated with glue, up-cycled to renewable energy per year.

Expected benefits for IKEA Industry.

- CO₂ savings: 14,000 tons per year
- Wood residue transportation savings: 300 truck journeys per year
- Fully circular and decentralised energy system created on-site
- Reduction in air pollution compared with previous wood combustion methods.



Customer case study



Energy monitoring software for Vodafone

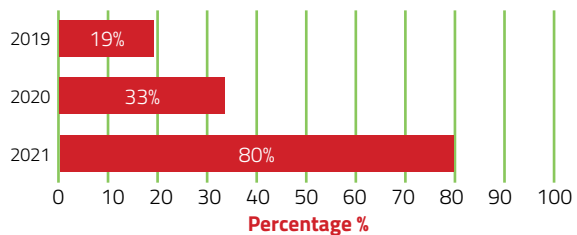
Increasing efficiency and credibility of Vodafone's environmental reporting through digitalisation

The problem.

Vodafone is transitioning to 100% renewable energy. However, Vodafone Spain's energy team lacks access to transparent data on the green energy they bought for environmental reporting. Too much administrative work is needed to collect proof of energy certificate cancellation to report with confidence.

Vodafone Spain's energy team needed to invest more than 100 hours to manually obtain this data, process it and get auditor approval. They had to call their local energy supplier to get a confirmation of the volume and type of energy certificates that were cancelled for Vodafone. Moreover, Vodafone Spain has 13,000 energy consumption sites (e.g. antennas), making data collection especially time consuming and prone to errors.

Purchased electricity from renewable sources (Europe)



Choosing FlexiDAO solution.

Vodafone implemented FlexiDAO's software solution, REspring, in 2020. As REspring is directly integrated with the national energy certificate registry, Vodafone can now automatically collect a list of all Guarantees of Origin that are officially cancelled by their energy supplier. REspring scans 13,000 consumption sites, that account for more than 500 GWh, and provides the emission calculation and the exact plant of origin of each certificate, as well as other data to assess the real environmental impact of the procurement strategy (e.g., age, technology and location of the sourcing renewable energy plant).

With FlexiDAO, Vodafone's energy team can now

- Check the volume of their energy consumption for each consumption site, what percentage of that consumption is actually covered with green energy certificates and calculate emissions for Scope 2 reporting, everything in one place.
- Filter, visualise and monitor KPIs to take future energy procurement decisions.
- Generate automatic reports of Vodafone's renewable energy certificate portfolio.
- In the future, feed the data into their Energy or Sustainability software thanks to FlexiDAO's APIs.
- All the collected and consolidated data is notarised onto the Energy Web Blockchain in order to provide with the ultimate trust and digital trail to third-parties that might want to further verify Vodafone's sustainability claims with assurance. (e.g. external auditors, for the application process to carbon disclosure initiatives, such as CDP).

Carmelha Tower, Monaco.

An innovative sustainable building

100% autonomous.

The customer and the challenge

The Principality of Monaco is committed to a smart and efficient energy transition policy. This has had an impact on the construction of new buildings in the city.

The Carmelha Tower is an innovative residential building currently under construction. It combines a wooden frame with solar thermal and solar photovoltaic installations on the terrace. However, this alone is not enough to earn the **E+C- label**, a French certification required by the customer that approves **positive energy and low carbon buildings**.



The solution proposed by Sylfen

Responding to a request by the engineering company EGIS, Sylfen proposed the addition of a Smart Energy Hub, comprising **a battery module and a reversible electrolyser module** able to store up to 3kg of hydrogen.

The Smart Energy Hub boosts the environmental performance of the building, and allows for the solar installation to cover 100% of energy consumption (electricity and heat) in the communal areas of the building. Whenever there is an excess of production in the solar installation, it is stored in the form of hydrogen and restored as electricity later on, at night, for example, or in poor weather conditions. The Smart Energy Hub covers not only the electricity needs of the building but also heating and hot water requirements.

If the stored hydrogen is insufficient to cover demand, the Smart Energy Hub has the capability to combine hydrogen with natural gas (progressively greened by biomethane) to generate electricity and effectively replace the grid supply in winter.

The building now fully complies with **E+C- label** criteria and achieves the highest levels of certification.

Key figures and facts

47

metres high
residential tower

8

storey building

25

homes

4,130

m² surface area

2022

delivery date

Certifications NF Habitat niveau Exceptionnel, BDM Gold Level, démarche E+C-, label Bepos Effinergie niveau E3C2, label OTIMU niveau 3 étoiles

Clean and reliable energy for e.Leclerc stores. The *Wind my Roof* solution

The Customer.

E.Leclerc is a major supermarket chain headquartered in Ivry-sur-Seine, France. It has more than 720 locations nationally plus 85 international stores which provide a wide assortment of products, daily fresh foods and a sophisticated shopping environment. This requires a significant and 100% reliable energy supply. Already a pioneer in eco-friendly products and recycling, E.Leclerc was looking for an effective way to improve energy efficiency in all its French stores, reflecting customer awareness and meeting EU and national energy consumption targets. The solution had to work in any location, in all seasons and at all hours of the day.

Up to
23%
of French
market share

720
stores
in France

Covers
62%
of the French
population

€45
billion turnover

The WindBox: a compact and versatile clean energy solution.

French start up Wind my Roof impressed E.Leclerc with its WindBox, a 4m by 1.6m module that uses both sun and wind to boost the energy autonomy of buildings. Placed on any high and flat roof, the WindBox can generate the same amount of electricity 24/7 all year round.

- **Renewable:** each WindBox can provide 2800 kWh/year wind + solar power.
- **Reliable:** produces as much energy as 10m² solar panels without peaks and dips.
- **Versatile:** installed on any exposed flat roof.
- **Climate resistant:** can withstand winds up to 180 km/h and temperatures of -15°C.
- **Local:** 92% made in France with a low carbon footprint.

Benefits for E.Leclerc.

E.Leclerc has ordered ten WindBoxes for installation and testing on the roof of a French store. Wind my Roof has already launched industrial production of its WindBoxes.

Expectations are high as Wind my Roof's solution could be exactly what E.Leclerc needs to provide clean reliable energy for all its French stores.



Six months ago we started to work with EIT InnoEnergy to find energy efficient solutions for the French stores. Wind my Roof interested us with their new kind of wind turbine that fits on the top of the stores, which combines solar power during the day and wind through the night."

Vincent Muller. *Director of Prospects and Innovation, E.Leclerc Energies*

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Accelerating sustainable energy innovations
Innovative energy solutions for your business
Edition 2024

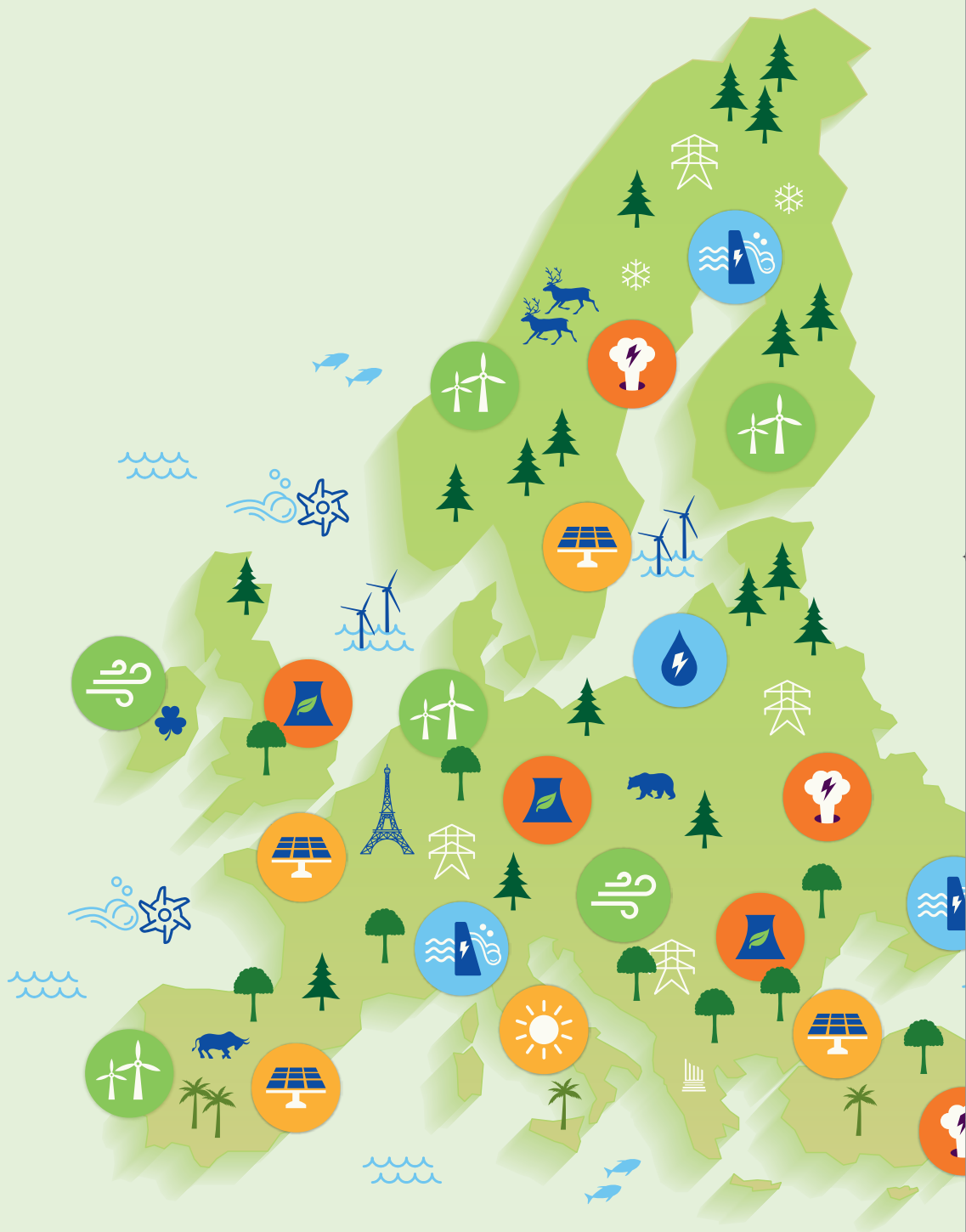
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EIT InnoEnergy website: www.innoenergy.com

For more information about this Catalogue, please contact: sales@innoenergy.com

The innovation engine for sustainable energy



EIT InnoEnergy

Kennispoort 6th floor
John F. Kennedylaan 2
5612 AB Eindhoven
The Netherlands
info@innoenergy.com



EIT InnoEnergy Benelux

Kennispoort 6th floor
John F. Kennedylaan 2
5612 AB Eindhoven
The Netherlands
benelux@innoenergy.com

EIT InnoEnergy France

1-3 Allée du Nanomètre
38000 Grenoble, France
france@innoenergy.com

EIT InnoEnergy Germany

Albert-Nestler-Strasse 21
76131 Karlsruhe, Germany
germany@innoenergy.com

EIT InnoEnergy Iberia

Edificio Nexus II Oficina 0A
Jordi Girona, 29
08034 Barcelona, Spain
iberia@innoenergy.com

EIT InnoEnergy Central Europe

Equal Business Park B
28 Wielicka Street
30 – 552 Kraków, Poland
central.europe@innoenergy.com

EIT InnoEnergy Scandinavia

Torsgatan 11, 8th floor
111 23 Stockholm, Sweden
scandinavia@innoenergy.com

EIT InnoEnergy USA

444 Somerville Ave
Somerville, Massachusetts
02143 United States
usa@innoenergy.com

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www.innoenergy.com

